IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DCKBK-A1-D

PRODUCT NAME: MUL INSTRUCTION TEST

DATE CREATED: 15 MAR 1972

MAINTAINER: DIAGNOSTIC GROUP

AUTHOR: BOB BRAIN

RESTORE ALL LOCATIONS BEFORE PROCEEDING TO NEXT TEST.

7.0 RESTRICTIONS
NONE

8.0 MISCELLANEOUS
ON TRAP ERRORS THE STACK POINTER(R6) WILL CONTAIN THE ADDRESS WHERE THE TRAP OCCURED.

8.1 EXECUTION TIME
THE PROGRAM TAKES ABOUT 1 MINUTE.

8.2 STACK POINTER
THE PROGRAM INITIALLY SETS THE STACK POINTER AT 500.

9.0 PROGRAM DESCRIPTIONS

THIS IS A TEST OF THE MUL INSTRUCTION, IT TESTS MUL ON DIFERENT NUMBER PATTERNS IN ALL REGISTERS

1.0 ABSTRACT

THIS PROGRAM WILL INCREMENTLY TEST AND ISOLATE SIMPLE MALFUNCTIONS
RELATED TO THE MUL INSTRUCTION

2.0 REQUIREMENTS

2.1 EQUIPMENT
BASIC 11/45 SYSTEM OR
11/40 WITH KE11-E OPTION

2.2 STORAGE
THIS PROGRAM USES 0 THRU 17500

2.3 PRELIMINARY PROGRAMS
DOAA THRU DOMA

3.0 LOADING PROCEDURE
LOAD PROGRAM USING ABS LOADER

4.0 STARTING PROCEDURE
LOAD ADDRESS 200, PRESS START, THE PROGRAM WILL LOOP
AND RING BELL ON PASS COMPLETION.

5.0 OPERATING PROCEDURE

5.1 SWITCH SETTINGS
NONE

5.2 SUBROUTINE ABSTRACTS

5.2.1 SCOPE
SCOPE IS A MOVE PC,R1 AND STORES THE PC+2 IN R1.

5.2.2 HLT
HLT IS A HALT INSTRUCTION.

6.0 ERRORS
ALL ERRORS WILL CAUSE A HALT
TRAP AND INTERRUPT ERRORS WILL CAUSE A HALT AT VECTOR+2.

6.1 ERROR RECOVERY
PRESS CONTINUE TO PROCEDE TO NEXT TEST

6.2 ERROR LOOPING
TO LOOP ON AN ERROR, PLACE A BRANCH TO THE PREVIOUS SCOPE
INSTRUCTION IN PLACE OF THE HALT INSTRUCTION.
NOTE THAT IF THE ERROR IS INTERMITTANT THAT THE TEST WILL
DROP THRU THE HALT AND PROCEED TO THE NEXT TEST.
THEREFORE, TO LOOP THE TEST CONTINUOSLY REPLACE THE BEQ .+4
INSTRUCTION IMMEDIATLY PRECEEDING THE HALT WITH A BRANCH
BACK TO THE PREVIOUS SCOPE.

TO LOOP ON TRAP FAILURES, PATCH IN THE FOLLOWING ROUTINE
AT THE ADDRESS OF THE TRAP VECTOR.

```
TRAPVEC:        TRAPVEC+4
TRAPVEC+2:      0
TRAPVEC+4:      012716  ;MOVE SCOPE ADDRESS TO STACK
TRAPVEC+6:      ADDRESS ;ADDRESS OF PREVIOUS SCOPE
TRAPVEC+10:     000006  ;RETURN TO TEST AT SCOPE
```

```
                                .TITLE  MAINDEC-11-DCKBK-A  MUL TEST
                                ;COPYRIGHT 1972, DIGITAL EQUIPMENT CORP,, MAYNARD, MASS,  01754
                                ;PROGRAM BY BOB BRAIN

                                .ABS

                    000000      .=0                             ;TRAP CATCHER 0 = 776

                    000000      HLT=HALT
                    010701      SCOPE=  10701
                    000001      N=1
                    000006      SP=%6
                    000007      PC=%7
                    177570      SWR=177570
                    177570      DISPLAY=SWR
                    177776      PS=177776
                    000000      M=0

                    000200      .=200
000200  000167  000576                JMP     BEG
                    001000      .=1000
001000  000000                ICNT:   0                       ;PASS COUNT

001002  012706  000500          BEG:    MOV     #500,%6         ;** STACK AT 500 **
001006  005037  177776                  CLR     @#PS
001012  032737  001000  177570          BIT     #1000,@#SWR     ;WHICH REGISTER SET?
001020  001403                          BEQ     .+10
001022  012737  004000  177776          MOV     #4000,@#PS      ;ALTERNATE!
001030  032767  000400  176532          BIT     #400,SWR
001036  001403                          BEQ     .+10
001040  116767  176524  176722          MOVB    SWR,177770
```



```
                                ;*****************************************************************
                                ;TEST 1   MUL   0 * #0 = 0 0   PS = 4
                                ;*****************************************************************

001046  010701                          SCOPE                   ;TEST OF MULTIPLY
001050  012700  000000                  MOV     #0,%0           ;LOAD MULTIPLICAN WITH 0
001054  070027  000000                  MUL     #0,%0           ;MULTIPLY 0 * #0
001060  013767  177776  013370          MOV     @#PS,PSW        ;SAVE PS
001066  122767  000004  013362          CMPB    #4,PSW          ;IS PS = 4
001074  001401                          BEQ     .+4
001076  000000                          HLT                     ;PS IS WRONG
001100  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
001104  001401                          BEQ     .+4
001106  000000                          HLT                     ;HIGH ORDER IS WRONG
001110  022701  000000                  CMP     #0,%011         ;IS LOW ORDER = 0
001114  001401                          BEQ     .+4
001116  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 2   MUL   0 * #1 = 0 0   PS = 4
                                ;*****************************************************************

001120  010701                          SCOPE                   ;TEST OF MULTIPLY
001122  012700  000000                  MOV     #0,%0           ;LOAD MULTIPLICAN WITH 0
001126  070027  000001                  MUL     #1,%0           ;MULTIPLY 0 * #1
001132  013767  177776  013316          MOV     @#PS,PSW        ;SAVE PS
001140  122767  000004  013310          CMPB    #4,PSW          ;IS PS = 4
001146  001401                          BEQ     .+4
001150  000000                          HLT                     ;PS IS WRONG
001152  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
001156  001401                          BEQ     .+4
001160  000000                          HLT                     ;HIGH ORDER IS WRONG
001162  022701  000000                  CMP     #0,%011         ;IS LOW ORDER = 0
001166  001401                          BEQ     .+4
001170  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 3   MUL   1 * #0 = 0 0   PS = 4
                                ;*****************************************************************

001172  010701                          SCOPE                   ;TEST OF MULTIPLY
001174  012700  000001                  MOV     #1,%0           ;LOAD MULTIPLICAN WITH 1
001200  070027  000000                  MUL     #0,%0           ;MULTIPLY 1 * #0
001204  013767  177776  013244          MOV     @#PS,PSW        ;SAVE PS
001212  122767  000004  013236          CMPB    #4,PSW          ;IS PS = 4
001220  001401                          BEQ     .+4
001222  000000                          HLT                     ;PS IS WRONG
001224  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
001230  001401                          BEQ     .+4
001232  000000                          HLT                     ;HIGH ORDER IS WRONG
001234  022701  000000                  CMP     #0,%0+1         ;IS LOW ORDER = 0
001240  001401                          BEQ     .+4
001242  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 4   MUL   -1 * #1 = -1 -1   PS = 10
                                ;*****************************************************************

001244  010701                          SCOPE                   ;TEST OF MULTIPLY
001246  012700  177777                  MOV     #-1,%0          ;LOAD MULTIPLICAN WITH -1
001252  070027  000001                  MUL     #1,%0           ;MULTIPLY -1 * #1
001256  013767  177776  013172          MOV     @#PS,PSW        ;SAVE PS
001264  122767  000010  013164          CMPB    #10,PSW         ;IS PS = 10
001272  001401                          BEQ     .+4
001274  000000                          HLT                     ;PS IS WRONG
001276  022700  177777                  CMP     #-1,%0          ;IS HIGH ORDER = -1
001302  001401                          BEQ     .+4
001304  000000                          HLT                     ;HIGH ORDER IS WRONG
001306  022701  177777                  CMP     #-1,%0+1        ;IS LOW ORDER = -1
001312  001401                          BEQ     .+4
001314  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 5   MUL   1 * #-1 = -1 -1   PS = 10
                                ;*****************************************************************

001316  010701                          SCOPE                   ;TEST OF MULTIPLY
001320  012700  000001                  MOV     #1,%0           ;LOAD MULTIPLICAN WITH 1
001324  070027  177777                  MUL     #-1,%0          ;MULTIPLY 1 * #-1
001330  013767  177776  013120          MOV     @#PS,PSW        ;SAVE PS
001336  122767  000010  013112          CMPB    #10,PSW         ;IS PS = 10
001344  001401                          BEQ     .+4
001346  000000                          HLT                     ;PS IS WRONG
001350  022700  177777                  CMP     #-1,%0          ;IS HIGH ORDER = -1
001354  001401                          BEQ     .+4
001356  000000                          HLT                     ;HIGH ORDER IS WRONG
001360  022701  177777                  CMP     #-1,%0+1        ;IS LOW ORDER = -1
001364  001401                          BEQ     .+4
001366  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 6   MUL   1 * #2 = 0 2   PS = 0
                                ;*****************************************************************

001370  010701                          SCOPE                   ;TEST OF MULTIPLY
001372  012700  000001                  MOV     #1,%0           ;LOAD MULTIPLICAN WITH 1
001376  070027  000002                  MUL     #2,%0           ;MULTIPLY 1 * #2
001402  013767  177776  013046          MOV     @#PS,PSW        ;SAVE PS
001410  122767  000000  013040          CMPB    #0,PSW          ;IS PS = 0
001416  001401                          BEQ     .+4
001420  000000                          HLT                     ;PS IS WRONG
001422  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
001426  001401                          BEQ     .+4
001430  000000                          HLT                     ;HIGH ORDER IS WRONG
001432  022701  000002                  CMP     #2,%0+1         ;IS LOW ORDER = 2
001436  001401                          BEQ     .+4
001440  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 7   MUL   2 * #2 = 0 4   PS = 0
                                ;*****************************************************************

001442  010701                          SCOPE                   ;TEST OF MULTIPLY
001444  012700  000002                  MOV     #2,%0           ;LOAD MULTIPLICAN WITH 2
001450  070027  000002                  MUL     #2,%0           ;MULTIPLY 2 * #2
001454  013767  177776  012774          MOV     @#PS,PSW        ;SAVE PS
001462  122767  000000  012766          CMPB    #0,PSW          ;IS PS = 0
001470  001401                          BEQ     .+4
001472  000000                          HLT                     ;PS IS WRONG
001474  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
001500  001401                          BEQ     .+4
001502  000000                          HLT                     ;HIGH ORDER IS WRONG
001504  022701  000004                  CMP     #4,%011         ;IS LOW ORDER = 4
001510  001401                          BEQ     .+4
001512  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 10   MUL   1000 * #200 = 1 0   PS = 1
                                ;*****************************************************************

001514  010701                          SCOPE                   ;TEST OF MULTIPLY
001516  012700  001000                  MOV     #1000,%0        ;LOAD MULTIPLICAN WITH 1000
001522  070027  000200                  MUL     #200,%0         ;MULTIPLY 1000 * #200
001526  013767  177776  012722          MOV     @#PS,PSW        ;SAVE PS
001534  122767  000001  012714          CMPB    #1,PSW          ;IS PS = 1
001542  001401                          BEQ     .+4
001544  000000                          HLT                     ;PS IS WRONG
001546  022700  000001                  CMP     #1,%0           ;IS HIGH ORDER = 1
001552  001401                          BEQ     .+4
001554  000000                          HLT                     ;HIGH ORDER IS WRONG
001556  022701  000000                  CMP     #0,%011         ;IS LOW ORDER = 0
001562  001401                          BEQ     .+4
001564  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 11   MUL   200 * #1000 = 1 0   PS = 1
                                ;*****************************************************************

001566  010701                          SCOPE                   ;TEST OF MULTIPLY
001570  012700  000200                  MOV     #200,%0         ;LOAD MULTIPLICAN WITH 200
001574  070027  001000                  MUL     #1000,%0        ;MULTIPLY 200 * #1000
001600  013767  177776  012650          MOV     @#PS,PSW        ;SAVE PS
001606  122767  000001  012642          CMPB    #1,PSW          ;IS PS = 1
001614  001401                          BEQ     .+4
001616  000000                          HLT                     ;PS IS WRONG
001620  022700  000001                  CMP     #1,%0           ;IS HIGH ORDER = 1
001624  001401                          BEQ     .+4
001626  000000                          HLT                     ;HIGH ORDER IS WRONG
001630  022701  000000                  CMP     #0,%011         ;IS LOW ORDER = 0
001634  001401                          BEQ     .+4
001636  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 12   MUL   77777 * #2 = 0 177776   PS = 1
                                ;*****************************************************************

001640  010701                          SCOPE                   ;TEST OF MULTIPLY
001642  012700  077777                  MOV     #77777,%0       ;LOAD MULTIPLICAN WITH 77777
001646  070027  000002                  MUL     #2,%0           ;MULTIPLY 77777 * #2
001652  013767  177776  012576          MOV     @#PS,PSW        ;SAVE PS
001660  122767  000001  012570          CMPB    #1,PSW          ;IS PS = 1
001666  001401                          BEQ     .+4
001670  000000                          HLT                     ;PS IS WRONG
001672  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
001676  001401                          BEQ     .+4
001700  000000                          HLT                     ;HIGH ORDER IS WRONG
001702  022701  177776                  CMP     #177776,%011    ;IS LOW ORDER = 177776
001706  001401                          BEQ     .+4
001710  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 13   MUL   2 * 077777 = 0 177776   PS = 1
                                ;*****************************************************************

001712  010701                          SCOPE                   ;TEST OF MULTIPLY
001714  012700  000002                  MOV     #2,%0           ;LOAD MULTIPLICAN WITH 2
001720  070027  077777                  MUL     #77777,%0       ;MULTIPLY 2 * #77777
001724  013767  177776  012524          MOV     @#PS,PSW        ;SAVE PS
001732  122767  000001  012516          CMPB    #1,PSW          ;IS PS = 1
001740  001401                          BEQ     .+4
001742  000000                          HLT                     ;PS IS WRONG
001744  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
001750  001401                          BEQ     .+4
001752  000000                          HLT                     ;HIGH ORDER IS WRONG
001754  022701  177776                  CMP     #177776,%011    ;IS LOW ORDER = 177776
001760  001401                          BEQ     .+4
001762  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 14   MUL   7777 * 010 = 0 77770   PS = 0
                                ;*****************************************************************

001764  010701                          SCOPE                   ;TEST OF MULTIPLY
001766  012700  007777                  MOV     #7777,%0        ;LOAD MULTIPLICAN WITH 7777
001772  070027  000010                  MUL     #10,%0          ;MULTIPLY 7777 * #10
001776  013767  177776  012452          MOV     @#PS,PSW        ;SAVE PS
002004  122767  000000  012444          CMPB    #0,PSW          ;IS PS = 0
002012  001401                          BEQ     .+4
002014  000000                          HLT                     ;PS IS WRONG
002016  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
002022  001401                          BEQ     .+4
002024  000000                          HLT                     ;HIGH ORDER IS WRONG
002026  022701  077770                  CMP     #77770,%011     ;IS LOW ORDER = 77770
002032  001401                          BEQ     .+4
002034  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 15   MUL   10 * 07777 = 0 77770   PS = 0
                                ;*****************************************************************

002036  010701                          SCOPE                   ;TEST OF MULTIPLY
002040  012700  000010                  MOV     #10,%0          ;LOAD MULTIPLICAN WITH 10
002044  070027  007777                  MUL     #7777,%0        ;MULTIPLY 10 * #7777
002050  013767  177776  012400          MOV     @#PS,PSW        ;SAVE PS
002056  122767  000000  012372          CMPB    #0,PSW          ;IS PS = 0
002064  001401                          BEQ     .+4
002066  000000                          HLT                     ;PS IS WRONG
002070  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
002074  001401                          BEQ     .+4
002076  000000                          HLT                     ;HIGH ORDER IS WRONG
002100  022701  077770                  CMP     #77770,%011     ;IS LOW ORDER = 77770
002104  001401                          BEQ     .+4
002106  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 16   MUL   77777 * 077777 = 37777 1   PS = 1
                                ;*****************************************************************

002110  010701                          SCOPE                   ;TEST OF MULTIPLY
002112  012700  077777                  MOV     #77777,%0       ;LOAD MULTIPLICAN WITH 77777
002116  070027  077777                  MUL     #77777,%0       ;MULTIPLY 77777 * #77777
002122  013767  177776  012326          MOV     @#PS,PSW        ;SAVE PS
002130  122767  000001  012320          CMPB    #1,PSW          ;IS PS = 1
002136  001401                          BEQ     .+4
002140  000000                          HLT                     ;PS IS WRONG
002142  022700  037777                  CMP     #37777,%0       ;IS HIGH ORDER = 37777
002146  001401                          BEQ     .+4
002150  000000                          HLT                     ;HIGH ORDER IS WRONG
002152  022701  000001                  CMP     #1,%011         ;IS LOW ORDER = 1
002156  001401                          BEQ     .+4
002160  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 17   MUL   77777 * #1 = 0 77777   PS = 0
                                ;*****************************************************************

002162  010701                          SCOPE                   ;TEST OF MULTIPLY
002164  012700  077777                  MOV     #77777,%0       ;LOAD MULTIPLICAN WITH 77777
002170  070027  000001                  MUL     #1,%0           ;MULTIPLY 77777 * #1
002174  013767  177776  012254          MOV     @#PS,PSW        ;SAVE PS
002202  122767  000000  012246          CMPB    #0,PSW          ;IS PS = 0
002210  001401                          BEQ     .+4
002212  000000                          HLT                     ;PS IS WRONG
002214  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
002220  001401                          BEQ     .+4
002222  000000                          HLT                     ;HIGH ORDER IS WRONG
002224  022701  077777                  CMP     #77777,%011     ;IS LOW ORDER = 77777
002230  001401                          BEQ     .+4
002232  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 20   MUL   1 * #77777 = 0 77777   PS = 0
                                ;*****************************************************************

002234  010701                          SCOPE                   ;TEST OF MULTIPLY
002236  012700  000001                  MOV     #1,%0           ;LOAD MULTIPLICAN WITH 1
002242  070027  077777                  MUL     #77777,%0       ;MULTIPLY 1 * #77777
002246  013767  177776  012202          MOV     @#PS,PSW        ;SAVE PS
002254  122767  000000  012174          CMPB    #0,PSW          ;IS PS = 0
002262  001401                          BEQ     .+4
002264  000000                          HLT                     ;PS IS WRONG
002266  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
002272  001401                          BEQ     .+4
002274  000000                          HLT                     ;HIGH ORDER IS WRONG
002276  022701  077777                  CMP     #77777,%011     ;IS LOW ORDER = 77777
002302  001401                          BEQ     .+4
002304  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 21   MUL   77777 * #-1 = -1 100001   PS = 10
                                ;*****************************************************************

002306  010701                          SCOPE                   ;TEST OF MULTIPLY
002310  012700  077777                  MOV     #77777,%0       ;LOAD MULTIPLICAN WITH 77777
002314  070027  177777                  MUL     #-1,%0          ;MULTIPLY 77777 * #-1
002320  013767  177776  012130          MOV     @#PS,PSW        ;SAVE PS
002326  122767  000010  012122          CMPB    #10,PSW         ;IS PS = 10
002334  001401                          BEQ     .+4
002336  000000                          HLT                     ;PS IS WRONG
002340  022700  177777                  CMP     #-1,%0          ;IS HIGH ORDER = -1
002344  001401                          BEQ     .+4
002346  000000                          HLT                     ;HIGH ORDER IS WRONG
002350  022701  100001                  CMP     #100001,%011    ;IS LOW ORDER = 100001
002354  001401                          BEQ     .+4
002356  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 22   MUL   -1 * #77777 = -1 100001   PS = 10
                                ;*****************************************************************

002360  010701                          SCOPE                   ;TEST OF MULTIPLY
002362  012700  177777                  MOV     #-1,%0          ;LOAD MULTIPLICAN WITH -1
002366  070027  077777                  MUL     #77777,%0       ;MULTIPLY -1 * #77777
002372  013767  177776  012056          MOV     @#PS,PSW        ;SAVE PS
002400  122767  000010  012050          CMPB    #10,PSW         ;IS PS = 10
002406  001401                          BEQ     .+4
002410  000000                          HLT                     ;PS IS WRONG
002412  022700  177777                  CMP     #-1,%0          ;IS HIGH ORDER = -1
002416  001401                          BEQ     .+4
002420  000000                          HLT                     ;HIGH ORDER IS WRONG
002422  022701  100001                  CMP     #100001,%011    ;IS LOW ORDER = 100001
002426  001401                          BEQ     .+4
002430  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 23   MUL   -2 * #77777 = -1 2   PS = 11
                                ;*****************************************************************

002432  010701                          SCOPE                   ;TEST OF MULTIPLY
002434  012700  177776                  MOV     #-2,%0          ;LOAD MULTIPLICAN WITH -2
002440  070027  077777                  MUL     #77777,%0       ;MULTIPLY -2 * #77777
002444  013767  177776  012004          MOV     @#PS,PSW        ;SAVE PS
002452  122767  000011  011776          CMPB    #11,PSW         ;IS PS = 11
002460  001401                          BEQ     .+4
002462  000000                          HLT                     ;PS IS WRONG
002464  022700  177777                  CMP     #-1,%0          ;IS HIGH ORDER = -1
002470  001401                          BEQ     .+4
002472  000000                          HLT                     ;HIGH ORDER IS WRONG
002474  022701  000002                  CMP     #2,%0!1         ;IS LOW ORDER = 2
002500  001401                          BEQ     .+4
002502  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 24   MUL   77777 * #-2 = -1 2   PS = 11
                                ;*****************************************************************

002504  010701                          SCOPE                   ;TEST OF MULTIPLY
002506  012700  077777                  MOV     #77777,%0       ;LOAD MULTIPLICAN WITH 77777
002512  070027  177776                  MUL     #-2,%0          ;MULTIPLY 77777 * #-2
002516  013767  177776  011732          MOV     @#PS,PSW        ;SAVE PS
002524  122767  000011  011724          CMPB    #11,PSW         ;IS PS = 11
002532  001401                          BEQ     .+4
002534  000000                          HLT                     ;PS IS WRONG
002536  022700  177777                  CMP     #-1,%0          ;IS HIGH ORDER = -1
002542  001401                          BEQ     .+4
002544  000000                          HLT                     ;HIGH ORDER IS WRONG
002546  022701  000002                  CMP     #2,%0!1         ;IS LOW ORDER = 2
002552  001401                          BEQ     .+4
002554  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 25   MUL   125252 * #2 = -1 52524   PS = 11
                                ;*****************************************************************

002556  010701                          SCOPE                   ;TEST OF MULTIPLY
002560  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
002564  070027  000002                  MUL     #2,%0           ;MULTIPLY 125252 * #2
002570  013767  177776  011660          MOV     @#PS,PSW        ;SAVE PS
002576  122767  000011  011652          CMPB    #11,PSW         ;IS PS = 11
002604  001401                          BEQ     .+4
002606  000000                          HLT                     ;PS IS WRONG
002610  022700  177777                  CMP     #-1,%0          ;IS HIGH ORDER = -1
002614  001401                          BEQ     .+4
002616  000000                          HLT                     ;HIGH ORDER IS WRONG
002620  022701  052524                  CMP     #52524,%0!1     ;IS LOW ORDER = 52524
002624  001401                          BEQ     .+4
002626  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 26   MUL   2 * #125252 = -1 52524   PS = 11
                                ;*****************************************************************

002630  010701                          SCOPE                   ;TEST OF MULTIPLY
002632  012700  000002                  MOV     #2,%0           ;LOAD MULTIPLICAN WITH 2
002636  070027  125252                  MUL     #125252,%0      ;MULTIPLY 2 * #125252
002642  013767  177776  011606          MOV     @#PS,PSW        ;SAVE PS
002650  122767  000011  011600          CMPB    #11,PSW         ;IS PS = 11
002656  001401                          BEQ     .+4
002660  000000                          HLT                     ;PS IS WRONG
002662  022700  177777                  CMP     #-1,%0          ;IS HIGH ORDER = -1
002666  001401                          BEQ     .+4
002670  000000                          HLT                     ;HIGH ORDER IS WRONG
002672  022701  052524                  CMP     #52524,%0!1     ;IS LOW ORDER = 52524
002676  001401                          BEQ     .+4
002700  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 27   MUL   52525 * #2 = 0 125252   PS = 1
                                ;*****************************************************************

002702  010701                          SCOPE                   ;TEST OF MULTIPLY
002704  012700  052525                  MOV     #52525,%0       ;LOAD MULTIPLICAN WITH 52525
002710  070027  000002                  MUL     #2,%0           ;MULTIPLY 52525 * #2
002714  013767  177776  011534          MOV     @#PS,PSW        ;SAVE PS
002722  122767  000001  011526          CMPB    #1,PSW          ;IS PS = 1
002730  001401                          BEQ     .+4
002732  000000                          HLT                     ;PS IS WRONG
002734  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
002740  001401                          BEQ     .+4
002742  000000                          HLT                     ;HIGH ORDER IS WRONG
002744  022701  125252                  CMP     #125252,%011    ;IS LOW ORDER = 125252
002750  001401                          BEQ     .+4
002752  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 30   MUL   2 * #52525 = 0 125252   PS = 1
                                ;*****************************************************************

002754  010701                          SCOPE                   ;TEST OF MULTIPLY
002756  012700  000002                  MOV     #2,%0           ;LOAD MULTIPLICAN WITH 2
002762  070027  052525                  MUL     #52525,%0       ;MULTIPLY 2 * #52525
002766  013767  177776  011462          MOV     @#PS,PSW        ;SAVE PS
002774  122767  000001  011454          CMPB    #1,PSW          ;IS PS = 1
003002  001401                          BEQ     .+4
003004  000000                          HLT                     ;PS IS WRONG
003006  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
003012  001401                          BEQ     .+4
003014  000000                          HLT                     ;HIGH ORDER IS WRONG
003016  022701  125252                  CMP     #125252,%011    ;IS LOW ORDER = 125252
003022  001401                          BEQ     .+4
003024  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 31   MUL   125252 * #40000 = 165252 100000   PS = 11
                                ;*****************************************************************

003026  010701                          SCOPE                   ;TEST OF MULTIPLY
003030  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
003034  070027  040000                  MUL     #40000,%0       ;MULTIPLY 125252 * #40000
003040  013767  177776  011410          MOV     @#PS,PSW        ;SAVE PS
003046  122767  000011  011402          CMPB    #11,PSW         ;IS PS = 11
003054  001401                          BEQ     .+4
003056  000000                          HLT                     ;PS IS WRONG
003060  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
003064  001401                          BEQ     .+4
003066  000000                          HLT                     ;HIGH ORDER IS WRONG
003070  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
003074  001401                          BEQ     .+4
003076  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 32   MUL   40000 * #125252 = 165252 100000   PS = 11
                                ;*****************************************************************

003100  010701                          SCOPE                   ;TEST OF MULTIPLY
003102  012700  040000                  MOV     #40000,%0       ;LOAD MULTIPLICAN WITH 40000
003106  070027  125252                  MUL     #125252,%0      ;MULTIPLY 40000 * #125252
003112  013767  177776  011336          MOV     @#PS,PSW        ;SAVE PS
003120  122767  000011  011330          CMPB    #11,PSW         ;IS PS = 11
003126  001401                          BEQ     .+4
003130  000000                          HLT                     ;PS IS WRONG
003132  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
003136  001401                          BEQ     .+4
003140  000000                          HLT                     ;HIGH ORDER IS WRONG
003142  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
003146  001401                          BEQ     .+4
003150  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 33   MUL   100000 * #100000 = 40000 0   PS = 1
                                ;*****************************************************************

003152  010701                          SCOPE                   ;TEST OF MULTIPLY
003154  012700  100000                  MOV     #100000,%0      ;LOAD MULTIPLICAN WITH 100000
003160  070027  100000                  MUL     #100000,%0      ;MULTIPLY 100000 * #100000
003164  013767  177776  011264          MOV     @#PS,PSW        ;SAVE PS
003172  122767  000001  011256          CMPB    #1,PSW          ;IS PS = 1
003200  001401                          BEQ     .+4
003202  000000                          HLT                     ;PS IS WRONG
003204  022700  040000                  CMP     #40000,%0       ;IS HIGH ORDER = 40000
003210  001401                          BEQ     .+4
003212  000000                          HLT                     ;HIGH ORDER IS WRONG
003214  022701  000000                  CMP     #0,%011         ;IS LOW ORDER = 0
003220  001401                          BEQ     .+4
003222  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 34   MUL   70707 * #70707 = 31221 44261   PS = 1
                                ;*****************************************************************

003224  010701                          SCOPE                   ;TEST OF MULTIPLY
003226  012700  070707                  MOV     #70707,%0       ;LOAD MULTIPLICAN WITH 70707
003232  070027  070707                  MUL     #70707,%0       ;MULTIPLY 70707 * #70707
003236  013767  177776  011212          MOV     @#PS,PSW        ;SAVE PS
003244  122767  000001  011204          CMPB    #1,PSW          ;IS PS = 1
003252  001401                          BEQ     .+4
003254  000000                          HLT                     ;PS IS WRONG
003256  022700  031221                  CMP     #31221,%0       ;IS HIGH ORDER = 31221
003262  001401                          BEQ     .+4
003264  000000                          HLT                     ;HIGH ORDER IS WRONG
003266  022701  044261                  CMP     #44261,%011     ;IS LOW ORDER = 44261
003272  001401                          BEQ     .+4
003274  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 35   MUL   107070 * #107070 = 31222 26100   PS = 1
                                ;*****************************************************************

003276  010701                          SCOPE                   ;TEST OF MULTIPLY
003300  012700  107070                  MOV     #107070,%0      ;LOAD MULTIPLICAN WITH 107070
003304  070027  107070                  MUL     #107070,%0      ;MULTIPLY 107070 * #107070
003310  013767  177776  011140          MOV     @#PS,PSW        ;SAVE PS
003316  122767  000001  011132          CMPB    #1,PSW          ;IS PS = 1
003324  001401                          BEQ     .+4
003326  000000                          HLT                     ;PS IS WRONG
003330  022700  031222                  CMP     #31222,%0       ;IS HIGH ORDER = 31222
003334  001401                          BEQ     .+4
003336  000000                          HLT                     ;HIGH ORDER IS WRONG
003340  022701  026100                  CMP     #26100,%011     ;IS LOW ORDER = 26100
003344  001401                          BEQ     .+4
003346  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 36   MUL   100000 * #77777 = 140000 100000   PS = 11
                                ;*****************************************************************

003350  010701                          SCOPE                   ;TEST OF MULTIPLY
003352  012700  100000                  MOV     #100000,%0      ;LOAD MULTIPLICAN WITH 100000
003356  070027  077777                  MUL     #77777,%0       ;MULTIPLY 100000 * #77777
003362  013767  177776  011066          MOV     @#PS,PSW        ;SAVE PS
003370  122767  000011  011060          CMPB    #11,PSW         ;IS PS = 11
003376  001401                          BEQ     .+4
003400  000000                          HLT                     ;PS IS WRONG
003402  022700  140000                  CMP     #140000,%0      ;IS HIGH ORDER = 140000
003406  001401                          BEQ     .+4
003410  000000                          HLT                     ;HIGH ORDER IS WRONG
003412  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
003416  001401                          BEQ     .+4
003420  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 37   MUL   77777 * #100000 = 140000 100000   PS = 11
                                ;*****************************************************************

003422  010701                          SCOPE                   ;TEST OF MULTIPLY
003424  012700  077777                  MOV     #77777,%0       ;LOAD MULTIPLICAN WITH 77777
003430  070027  100000                  MUL     #100000,%0      ;MULTIPLY 77777 * #100000
003434  013767  177776  011014          MOV     @#PS,PSW        ;SAVE PS
003442  122767  000011  011006          CMPB    #11,PSW         ;IS PS = 11
003450  001401                          BEQ     .+4
003452  000000                          HLT                     ;PS IS WRONG
003454  022700  140000                  CMP     #140000,%0      ;IS HIGH ORDER = 140000
003460  001401                          BEQ     .+4
003462  000000                          HLT                     ;HIGH ORDER IS WRONG
003464  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
003470  001401                          BEQ     .+4
003472  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 40   MUL   157634 * #104031 = 7453 133074   PS = 1
                                ;*****************************************************************

003474  010701                          SCOPE                   ;TEST OF MULTIPLY
003476  012700  157634                  MOV     #157634,%0      ;LOAD MULTIPLICAN WITH 157634
003502  070027  104031                  MUL     #104031,%0      ;MULTIPLY 157634 * #104031
003506  013767  177776  010742          MOV     @#PS,PSW        ;SAVE PS
003514  122767  000001  010734          CMPB    #1,PSW          ;IS PS = 1
003522  001401                          BEQ     .+4
003524  000000                          HLT                     ;PS IS WRONG
003526  022700  007453                  CMP     #7453,%0        ;IS HIGH ORDER = 7453
003532  001401                          BEQ     .+4
003534  000000                          HLT                     ;HIGH ORDER IS WRONG
003536  022701  133074                  CMP     #133074,%011    ;IS LOW ORDER = 133074
003542  001401                          BEQ     .+4
003544  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 41   MUL   104031 * #157634 = 7453 133074   PS = 1
                                ;*****************************************************************

003546  010701                          SCOPE                   ;TEST OF MULTIPLY
003550  012700  104031                  MOV     #104031,%0      ;LOAD MULTIPLICAN WITH 104031
003554  070027  157634                  MUL     #157634,%0      ;MULTIPLY 104031 * #157634
003560  013767  177776  010670          MOV     @#PS,PSW        ;SAVE PS
003566  122767  000001  010662          CMPB    #1,PSW          ;IS PS = 1
003574  001401                          BEQ     .+4
003576  000000                          HLT                     ;PS IS WRONG
003600  022700  007453                  CMP     #7453,%0        ;IS HIGH ORDER = 7453
003604  001401                          BEQ     .+4
003606  000000                          HLT                     ;HIGH ORDER IS WRONG
003610  022701  133074                  CMP     #133074,%011    ;IS LOW ORDER = 133074
003614  001401                          BEQ     .+4
003616  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 42   MUL   152210 * #0 = 0 0   PS = 4
                                ;*****************************************************************

003620  010701                          SCOPE                   ;TEST OF MULTIPLY
003622  012700  152210                  MOV     #152210,%0      ;LOAD MULTIPLICAN WITH 152210
003626  070027  000000                  MUL     #0,%0           ;MULTIPLY 152210 * #0
003632  013767  177776  010616          MOV     @#PS,PSW        ;SAVE PS
003640  122767  000004  010610          CMPB    #4,PSW          ;IS PS = 4
003646  001401                          BEQ     .+4
003650  000000                          HLT                     ;PS IS WRONG
003652  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
003656  001401                          BEQ     .+4
003660  000000                          HLT                     ;HIGH ORDER IS WRONG
003662  022701  000000                  CMP     #0,%011         ;IS LOW ORDER = 0
003666  001401                          BEQ     .+4
003670  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 43   MUL   0 * #152210 = 0 0   PS = 4
                                ;*****************************************************************

003672  010701                          SCOPE                   ;TEST OF MULTIPLY
003674  012700  000000                  MOV     #0,%0           ;LOAD MULTIPLICAN WITH 0
003700  070027  152210                  MUL     #152210,%0      ;MULTIPLY 0 * #152210
003704  013767  177776  010544          MOV     @#PS,PSW        ;SAVE PS
003712  122767  000004  010536          CMPB    #4,PSW          ;IS PS = 4
003720  001401                          BEQ     .+4
003722  000000                          HLT                     ;PS IS WRONG
003724  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
003730  001401                          BEQ     .+4
003732  000000                          HLT                     ;HIGH ORDER IS WRONG
003734  022701  000000                  CMP     #0,%011         ;IS LOW ORDER = 0
003740  001401                          BEQ     .+4
003742  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 44   MUL   -1 * #0 = 0 0   PS = 4
                                ;*****************************************************************

003744  010701                          SCOPE                   ;TEST OF MULTIPLY
003746  012700  177777                  MOV     #-1,%0          ;LOAD MULTIPLICAN WITH -1
003752  070027  000000                  MUL     #0,%0           ;MULTIPLY -1 * #0
003756  013767  177776  010472          MOV     @#PS,PSW        ;SAVE PS
003764  122767  000004  010464          CMPB    #4,PSW          ;IS PS = 4
003772  001401                          BEQ     .+4
003774  000000                          HLT                     ;PS IS WRONG
003776  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
004002  001401                          BEQ     .+4
004004  000000                          HLT                     ;HIGH ORDER IS WRONG
004006  022701  000000                  CMP     #0,%011         ;IS LOW ORDER = 0
004012  001401                          BEQ     .+4
004014  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 45   MUL   0 * #-1 = 0 0   PS = 4
                                ;*****************************************************************

004016  010701                          SCOPE                   ;TEST OF MULTIPLY
004020  012700  000000                  MOV     #0,%0           ;LOAD MULTIPLICAN WITH 0
004024  070027  177777                  MUL     #-1,%0          ;MULTIPLY 0 * #-1
004030  013767  177776  010420          MOV     @#PS,PSW        ;SAVE PS
004036  122767  000004  010412          CMPB    #4,PSW          ;IS PS = 4
004044  001401                          BEQ     .+4
004046  000000                          HLT                     ;PS IS WRONG
004050  022700  000000                  CMP     #0,%0           ;IS HIGH ORDER = 0
004054  001401                          BEQ     .+4
004056  000000                          HLT                     ;HIGH ORDER IS WRONG
004060  022701  000000                  CMP     #0,%011         ;IS LOW ORDER = 0
004064  001401                          BEQ     .+4
004066  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 46   MUL   -1 * #1 = -1 -1   PS = 10
                                ;*****************************************************************

004070  010701                          SCOPE                   ;TEST OF MULTIPLY
004072  012701  177777                  MOV     #-1,%1          ;LOAD MULTIPLICAN WITH -1
004076  070127  000001                  MUL     #1,%1           ;MULTIPLY -1 * #1
004102  013767  177776  010346          MOV     @#PS,PSW        ;SAVE PS
004110  122767  000010  010340          CMPB    #10,PSW         ;IS PS = 10
004116  001401                          BEQ     .+4
004120  000000                          HLT                     ;PS IS WRONG
004122  022701  177777                  CMP     #-1,%1          ;IS HIGH ORDER = -1
004126  001401                          BEQ     .+4
004130  000000                          HLT                     ;HIGH ORDER IS WRONG
004132  022701  177777                  CMP     #-1,%111        ;IS LOW ORDER = -1
004136  001401                          BEQ     .+4
004140  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 47   MUL   -1 * #0 = 0 0   PS = 4
                                ;*****************************************************************

004142  010701                          SCOPE                   ;TEST OF MULTIPLY
004144  012701  177777                  MOV     #-1,%1          ;LOAD MULTIPLICAN WITH -1
004150  070127  000000                  MUL     #0,%1           ;MULTIPLY -1 * #0
004154  013767  177776  010274          MOV     @#PS,PSW        ;SAVE PS
004162  122767  000004  010266          CMPB    #4,PSW          ;IS PS = 4
004170  001401                          BEQ     .+4
004172  000000                          HLT                     ;PS IS WRONG
004174  022701  000000                  CMP     #0,%1           ;IS HIGH ORDER = 0
004200  001401                          BEQ     .+4
004202  000000                          HLT                     ;HIGH ORDER IS WRONG
004204  022701  000000                  CMP     #0,%111         ;IS LOW ORDER = 0
004210  001401                          BEQ     .+4
004212  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 50   MUL   77777 * #100000 = 100000 100000   PS = 11
                                ;*****************************************************************

004214  010701                          SCOPE                   ;TEST OF MULTIPLY
004216  012701  077777                  MOV     #77777,%1       ;LOAD MULTIPLICAN WITH 77777
004222  070127  100000                  MUL     #100000,%1      ;MULTIPLY 77777 * #100000
004226  013767  177776  010222          MOV     @#PS,PSW        ;SAVE PS
004234  122767  000011  010214          CMPB    #11,PSW         ;IS PS = 11
004242  001401                          BEQ     .+4
004244  000000                          HLT                     ;PS IS WRONG
004246  022701  100000                  CMP     #100000,%1      ;IS HIGH ORDER = 100000
004252  001401                          BEQ     .+4
004254  000000                          HLT                     ;HIGH ORDER IS WRONG
004256  022701  100000                  CMP     #100000,%111    ;IS LOW ORDER = 100000
004262  001401                          BEQ     .+4
004264  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 51   MUL   -1 * #77777 = 100001 100001   PS = 10
                                ;*****************************************************************

004266  010701                          SCOPE                   ;TEST OF MULTIPLY
004270  012701  177777                  MOV     #-1,%1          ;LOAD MULTIPLICAN WITH -1
004274  070127  077777                  MUL     #77777,%1       ;MULTIPLY -1 * #77777
004300  013767  177776  010150          MOV     @#PS,PSW        ;SAVE PS
004306  122767  000010  010142          CMPB    #10,PSW         ;IS PS = 10
004314  001401                          BEQ     .+4
004316  000000                          HLT                     ;PS IS WRONG
004320  022701  100001                  CMP     #100001,%1      ;IS HIGH ORDER = 100001
004324  001401                          BEQ     .+4
004326  000000                          HLT                     ;HIGH ORDER IS WRONG
004330  022701  100001                  CMP     #100001,%111    ;IS LOW ORDER = 100001
004334  001401                          BEQ     .+4
004336  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 52   MUL   77777 * #77777 = 1 1   PS = 1
                                ;*****************************************************************

004340  010701                          SCOPE                   ;TEST OF MULTIPLY
004342  012701  077777                  MOV     #77777,%1       ;LOAD MULTIPLICAN WITH 77777
004346  070127  077777                  MUL     #77777,%1       ;MULTIPLY 77777 * #77777
004352  013767  177776  010076          MOV     @#PS,PSW        ;SAVE PS
004360  122767  000001  010070          CMPB    #1,PSW          ;IS PS = 1
004366  001401                          BEQ     .+4
004370  000000                          HLT                     ;PS IS WRONG
004372  022701  000001                  CMP     #1,%1           ;IS HIGH ORDER = 1
004376  001401                          BEQ     .+4
004400  000000                          HLT                     ;HIGH ORDER IS WRONG
004402  022701  000001                  CMP     #1,%111         ;IS LOW ORDER = 1
004406  001401                          BEQ     .+4
004410  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                        ;*****************************************************************
                                        ;TEST 53   MUL   2 * #2 = 4 4   PS = 0
                                        ;*****************************************************************

004412  010701                          SCOPE                   ;TEST OF MULTIPLY
004414  012701  000002                  MOV     #2,%1           ;LOAD MULTIPLICAN WITH 2
004420  070127  000002                  MUL     #2,%1           ;MULTIPLY 2 * #2
004424  013767  177776  010024          MOV     @#PS,PSW        ;SAVE PS
004432  122767  000000  010016          CMPB    #0,PSW          ;IS PS = 0
004440  001401                          BEQ     .+4
004442  000000                          HLT                     ;PS IS WRONG
004444  022701  000004                  CMP     #4,%1           ;IS HIGH ORDER = 4
004450  001401                          BEQ     .+4
004452  000000                          HLT                     ;HIGH ORDER IS WRONG
004454  022701  000004                  CMP     #4,%1!1         ;IS LOW ORDER = 4
004460  001401                          BEQ     .+4
004462  000000                          HLT                     ;LOW ORDER IS WRONG


                                        ;*****************************************************************
                                        ;TEST 54   MUL   0 * #0 = 0 0   PS = 4
                                        ;*****************************************************************

004464  010701                          SCOPE                   ;TEST OF MULTIPLY
004466  012702  000000                  MOV     #0,%2           ;LOAD MULTIPLICAN WITH 0
004472  070227  000000                  MUL     #0,%2           ;MULTIPLY 0 * #0
004476  013767  177776  007752          MOV     @#PS,PSW        ;SAVE PS
004504  122767  000004  007744          CMPB    #4,PSW          ;IS PS = 4
004512  001401                          BEQ     .+4
004514  000000                          HLT                     ;PS IS WRONG
004516  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
004522  001401                          BEQ     .+4
004524  000000                          HLT                     ;HIGH ORDER IS WRONG
004526  022703  000000                  CMP     #0,%2!1         ;IS LOW ORDER = 0
004532  001401                          BEQ     .+4
004534  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                        ;*****************************************************************
                                        ;TEST 55   MUL   0 * #1 = 0 0   PS = 4
                                        ;*****************************************************************

004536  010701                          SCOPE                   ;TEST OF MULTIPLY
004540  012702  000000                  MOV     #0,%2           ;LOAD MULTIPLICAN WITH 0
004544  070227  000001                  MUL     #1,%2           ;MULTIPLY 0 * #1
004550  013767  177776  007700          MOV     @#PS,PSW        ;SAVE PS
004556  122767  000004  007672          CMPB    #4,PSW          ;IS PS = 4
004564  001401                          BEQ     .+4
004566  000000                          HLT                     ;PS IS WRONG
004570  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
004574  001401                          BEQ     .+4
004576  000000                          HLT                     ;HIGH ORDER IS WRONG
004600  022703  000000                  CMP     #0,%2!1         ;IS LOW ORDER = 0
004604  001401                          BEQ     .+4
004606  000000                          HLT                     ;LOW ORDER IS WRONG


                                        ;*****************************************************************
                                        ;TEST 56   MUL   1 * #0 = 0 0   PS = 4
                                        ;*****************************************************************

004610  010701                          SCOPE                   ;TEST OF MULTIPLY
004612  012702  000001                  MOV     #1,%2           ;LOAD MULTIPLICAN WITH 1
004616  070227  000000                  MUL     #0,%2           ;MULTIPLY 1 * #0
004622  013767  177776  007626          MOV     @#PS,PSW        ;SAVE PS
004630  122767  000004  007620          CMPB    #4,PSW          ;IS PS = 4
004636  001401                          BEQ     .+4
004640  000000                          HLT                     ;PS IS WRONG
004642  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
004646  001401                          BEQ     .+4
004650  000000                          HLT                     ;HIGH ORDER IS WRONG
004652  022703  000000                  CMP     #0,%2!1         ;IS LOW ORDER = 0
004656  001401                          BEQ     .+4
004660  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 57   MUL   -1 * #1 = -1 -1   PS = 10
                                ;*****************************************************************

004662  010701                          SCOPE                   ;TEST OF MULTIPLY
004664  012702  177777                  MOV     #-1,%2          ;LOAD MULTIPLICAN WITH -1
004670  070227  000001                  MUL     #1,%2           ;MULTIPLY -1 * #1
004674  013767  177776  007554          MOV     @#PS,PSW        ;SAVE PS
004702  122767  000010  007546          CMPB    #10,PSW         ;IS PS = 10
004710  001401                          BEQ     .+4
004712  000000                          HLT                     ;PS IS WRONG
004714  022702  177777                  CMP     #-1,%2          ;IS HIGH ORDER = -1
004720  001401                          BEQ     .+4
004722  000000                          HLT                     ;HIGH ORDER IS WRONG
004724  022703  177777                  CMP     #-1,%2+1        ;IS LOW ORDER = -1
004730  001401                          BEQ     .+4
004732  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 60   MUL   1 * #-1 = -1 -1   PS = 10
                                ;*****************************************************************

004734  010701                          SCOPE                   ;TEST OF MULTIPLY
004736  012702  000001                  MOV     #1,%2           ;LOAD MULTIPLICAN WITH 1
004742  070227  177777                  MUL     #-1,%2          ;MULTIPLY 1 * #-1
004746  013767  177776  007502          MOV     @#PS,PSW        ;SAVE PS
004754  122767  000010  007474          CMPB    #10,PSW         ;IS PS = 10
004762  001401                          BEQ     .+4
004764  000000                          HLT                     ;PS IS WRONG
004766  022702  177777                  CMP     #-1,%2          ;IS HIGH ORDER = -1
004772  001401                          BEQ     .+4
004774  000000                          HLT                     ;HIGH ORDER IS WRONG
004776  022703  177777                  CMP     #-1,%2+1        ;IS LOW ORDER = -1
005002  001401                          BEQ     .+4
005004  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 61   MUL   1 * #2 = 0 2   PS = 0
                                ;*****************************************************************

005006  010701                          SCOPE                   ;TEST OF MULTIPLY
005010  012702  000001                  MOV     #1,%2           ;LOAD MULTIPLICAN WITH 1
005014  070227  000002                  MUL     #2,%2           ;MULTIPLY 1 * #2
005020  013767  177776  007430          MOV     @#PS,PSW        ;SAVE PS
005026  122767  000000  007422          CMPB    #0,PSW          ;IS PS = 0
005034  001401                          BEQ     .+4
005036  000000                          HLT                     ;PS IS WRONG
005040  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
005044  001401                          BEQ     .+4
005046  000000                          HLT                     ;HIGH ORDER IS WRONG
005050  022703  000002                  CMP     #2,%2+1         ;IS LOW ORDER = 2
005054  001401                          BEQ     .+4
005056  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 62   MUL   2 * #2 = 0 4   PS = 0
                                ;*****************************************************************

005060  010701                          SCOPE                   ;TEST OF MULTIPLY
005062  012702  000002                  MOV     #2,%2           ;LOAD MULTIPLICAN WITH 2
005066  070227  000002                  MUL     #2,%2           ;MULTIPLY 2 * #2
005072  013767  177776  007356          MOV     @#PS,PSW        ;SAVE PS
005100  122767  000000  007350          CMPB    #0,PSW          ;IS PS = 0
005106  001401                          BEQ     .+4
005110  000000                          HLT                     ;PS IS WRONG
005112  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
005116  001401                          BEQ     .+4
005120  000000                          HLT                     ;HIGH ORDER IS WRONG
005122  022703  000004                  CMP     #4,%2+1         ;IS LOW ORDER = 4
005126  001401                          BEQ     .+4
005130  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 63   MUL   1000 * #200 = 1 0   PS = 1
                                ;*****************************************************************

005132  010701                          SCOPE                   ;TEST OF MULTIPLY
005134  012702  001000                  MOV     #1000,%2        ;LOAD MULTIPLICAN WITH 1000
005140  070227  000200                  MUL     #200,%2         ;MULTIPLY 1000 * #200
005144  013767  177776  007304          MOV     @#PS,PSW        ;SAVE PS
005152  122767  000001  007276          CMPB    #1,PSW          ;IS PS = 1
005160  001401                          BEQ     .+4
005162  000000                          HLT                     ;PS IS WRONG
005164  022702  000001                  CMP     #1,%2           ;IS HIGH ORDER = 1
005170  001401                          BEQ     .+4
005172  000000                          HLT                     ;HIGH ORDER IS WRONG
005174  022703  000000                  CMP     #0,%2!1         ;IS LOW ORDER = 0
005200  001401                          BEQ     .+4
005202  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 64   MUL   200 * #1000 = 1 0   PS = 1
                                ;*****************************************************************

005204  010701                          SCOPE                   ;TEST OF MULTIPLY
005206  012702  000200                  MOV     #200,%2         ;LOAD MULTIPLICAN WITH 200
005212  070227  001000                  MUL     #1000,%2        ;MULTIPLY 200 * #1000
005216  013767  177776  007232          MOV     @#PS,PSW        ;SAVE PS
005224  122767  000001  007224          CMPB    #1,PSW          ;IS PS = 1
005232  001401                          BEQ     .+4
005234  000000                          HLT                     ;PS IS WRONG
005236  022702  000001                  CMP     #1,%2           ;IS HIGH ORDER = 1
005242  001401                          BEQ     .+4
005244  000000                          HLT                     ;HIGH ORDER IS WRONG
005246  022703  000000                  CMP     #0,%2!1         ;IS LOW ORDER = 0
005252  001401                          BEQ     .+4
005254  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 65   MUL   77777 * #2 = 0 177776   PS = 1
                                ;*****************************************************************

005256  010701                          SCOPE                   ;TEST OF MULTIPLY
005260  012702  077777                  MOV     #77777,%2       ;LOAD MULTIPLICAN WITH 77777
005264  070227  000002                  MUL     #2,%2           ;MULTIPLY 77777 * #2
005270  013767  177776  007160          MOV     @#PS,PSW        ;SAVE PS
005276  122767  000001  007152          CMPB    #1,PSW          ;IS PS = 1
005304  001401                          BEQ     .+4
005306  000000                          HLT                     ;PS IS WRONG
005310  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
005314  001401                          BEQ     .+4
005316  000000                          HLT                     ;HIGH ORDER IS WRONG
005320  022703  177776                  CMP     #177776,%2!1    ;IS LOW ORDER = 177776
005324  001401                          BEQ     .+4
005326  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 66   MUL   2 * #77777 = 0 177776   PS = 1
                                ;*****************************************************************

005330  010701                          SCOPE                   ;TEST OF MULTIPLY
005332  012702  000002                  MOV     #2,%2           ;LOAD MULTIPLICAN WITH 2
005336  070227  077777                  MUL     #77777,%2       ;MULTIPLY 2 * #77777
005342  013767  177776  007106          MOV     @#PS,PSW        ;SAVE PS
005350  122767  000001  007100          CMPB    #1,PSW          ;IS PS = 1
005356  001401                          BEQ     .+4
005360  000000                          HLT                     ;PS IS WRONG
005362  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
005366  001401                          BEQ     .+4
005370  000000                          HLT                     ;HIGH ORDER IS WRONG
005372  022703  177776                  CMP     #177776,%2!1    ;IS LOW ORDER = 177776
005376  001401                          BEQ     .+4
005400  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 67   MUL   7777 * #10 = 0 77770   PS = 0
                                ;*****************************************************************

005402  010701                          SCOPE                   ;TEST OF MULTIPLY
005404  012702  007777                  MOV     #7777,%2        ;LOAD MULTIPLICAN WITH 7777
005410  070227  000010                  MUL     #10,%2          ;MULTIPLY 7777 * #10
005414  013767  177776  007034          MOV     @#PS,PSW        ;SAVE PS
005422  122767  000000  007026          CMPB    #0,PSW          ;IS PS = 0
005430  001401                          BEQ     .+4
005432  000000                          HLT                     ;PS IS WRONG
005434  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
005440  001401                          BEQ     .+4
005442  000000                          HLT                     ;HIGH ORDER IS WRONG
005444  022703  077770                  CMP     #77770,%211     ;IS LOW ORDER = 77770
005450  001401                          BEQ     .+4
005452  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 70   MUL   10 * #7777 = 0 77770   PS = 0
                                ;*****************************************************************

005454  010701                          SCOPE                   ;TEST OF MULTIPLY
005456  012702  000010                  MOV     #10,%2          ;LOAD MULTIPLICAN WITH 10
005462  070227  007777                  MUL     #7777,%2        ;MULTIPLY 10 * #7777
005466  013767  177776  006762          MOV     @#PS,PSW        ;SAVE PS
005474  122767  000000  006754          CMPB    #0,PSW          ;IS PS = 0
005502  001401                          BEQ     .+4
005504  000000                          HLT                     ;PS IS WRONG
005506  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
005512  001401                          BEQ     .+4
005514  000000                          HLT                     ;HIGH ORDER IS WRONG
005516  022703  077770                  CMP     #77770,%211     ;IS LOW ORDER = 77770
005522  001401                          BEQ     .+4
005524  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 71   MUL   77777 * #77777 = 37777 1   PS = 1
                                ;*****************************************************************

005526  010701                          SCOPE                   ;TEST OF MULTIPLY
005530  012702  077777                  MOV     #77777,%2       ;LOAD MULTIPLICAN WITH 77777
005534  070227  077777                  MUL     #77777,%2       ;MULTIPLY 77777 * #77777
005540  013767  177776  006710          MOV     @#PS,PSW        ;SAVE PS
005546  122767  000001  006702          CMPB    #1,PSW          ;IS PS = 1
005554  001401                          BEQ     .+4
005556  000000                          HLT                     ;PS IS WRONG
005560  022702  037777                  CMP     #37777,%2       ;IS HIGH ORDER = 37777
005564  001401                          BEQ     .+4
005566  000000                          HLT                     ;HIGH ORDER IS WRONG
005570  022703  000001                  CMP     #1,%211         ;IS LOW ORDER = 1
005574  001401                          BEQ     .+4
005576  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 72   MUL   77777 * #1 = 0 77777   PS = 0
                                ;*****************************************************************

005600  010701                          SCOPE                   ;TEST OF MULTIPLY
005602  012702  077777                  MOV     #77777,%2       ;LOAD MULTIPLICAN WITH 77777
005606  070227  000001                  MUL     #1,%2           ;MULTIPLY 77777 * #1
005612  013767  177776  006636          MOV     @#PS,PSW        ;SAVE PS
005620  122767  000000  006630          CMPB    #0,PSW          ;IS PS = 0
005626  001401                          BEQ     .+4
005630  000000                          HLT                     ;PS IS WRONG
005632  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
005636  001401                          BEQ     .+4
005640  000000                          HLT                     ;HIGH ORDER IS WRONG
005642  022703  077777                  CMP     #77777,%211     ;IS LOW ORDER = 77777
005646  001401                          BEQ     .+4
005650  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 73   MUL   1 * #77777 = 0 77777   PS = 0
                                ;*****************************************************************

005652  010701                          SCOPE                   ;TEST OF MULTIPLY
005654  012702  000001                  MOV     #1,%2           ;LOAD MULTIPLICAN WITH 1
005660  070227  077777                  MUL     #77777,%2       ;MULTIPLY 1 * #77777
005664  013767  177776  006564          MOV     @#PS,PSW        ;SAVE PS
005672  122767  000000  006556          CMPB    #0,PSW          ;IS PS = 0
005700  001401                          BEQ     .+4
005702  000000                          HLT                     ;PS IS WRONG
005704  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
005710  001401                          BEQ     .+4
005712  000000                          HLT                     ;HIGH ORDER IS WRONG
005714  022703  077777                  CMP     #77777,%2+1     ;IS LOW ORDER = 77777
005720  001401                          BEQ     .+4
005722  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 74   MUL   77777 * #-1 = -1 100001   PS = 10
                                ;*****************************************************************

005724  010701                          SCOPE                   ;TEST OF MULTIPLY
005726  012702  077777                  MOV     #77777,%2       ;LOAD MULTIPLICAN WITH 77777
005732  070227  177777                  MUL     #-1,%2          ;MULTIPLY 77777 * #-1
005736  013767  177776  006512          MOV     @#PS,PSW        ;SAVE PS
005744  122767  000010  006504          CMPB    #10,PSW         ;IS PS = 10
005752  001401                          BEQ     .+4
005754  000000                          HLT                     ;PS IS WRONG
005756  022702  177777                  CMP     #-1,%2          ;IS HIGH ORDER = -1
005762  001401                          BEQ     .+4
005764  000000                          HLT                     ;HIGH ORDER IS WRONG
005766  022703  100001                  CMP     #100001,%2+1    ;IS LOW ORDER = 100001
005772  001401                          BEQ     .+4
005774  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 75   MUL   -1 * #77777 = -1 100001   PS = 10
                                ;*****************************************************************

005776  010701                          SCOPE                   ;TEST OF MULTIPLY
006000  012702  177777                  MOV     #-1,%2          ;LOAD MULTIPLICAN WITH -1
006004  070227  077777                  MUL     #77777,%2       ;MULTIPLY -1 * #77777
006010  013767  177776  006440          MOV     @#PS,PSW        ;SAVE PS
006016  122767  000010  006432          CMPB    #10,PSW         ;IS PS = 10
006024  001401                          BEQ     .+4
006026  000000                          HLT                     ;PS IS WRONG
006030  022702  177777                  CMP     #-1,%2          ;IS HIGH ORDER = -1
006034  001401                          BEQ     .+4
006036  000000                          HLT                     ;HIGH ORDER IS WRONG
006040  022703  100001                  CMP     #100001,%2+1    ;IS LOW ORDER = 100001
006044  001401                          BEQ     .+4
006046  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 76   MUL   -2 * #77777 = -1 2   PS = 11
                                ;*****************************************************************

006050  010701                          SCOPE                   ;TEST OF MULTIPLY
006052  012702  177776                  MOV     #-2,%2          ;LOAD MULTIPLICAN WITH -2
006056  070227  077777                  MUL     #77777,%2       ;MULTIPLY -2 * #77777
006062  013767  177776  006366          MOV     @#PS,PSW        ;SAVE PS
006070  122767  000011  006360          CMPB    #11,PSW         ;IS PS = 11
006076  001401                          BEQ     .+4
006100  000000                          HLT                     ;PS IS WRONG
006102  022702  177777                  CMP     #-1,%2          ;IS HIGH ORDER = -1
006106  001401                          BEQ     .+4
006110  000000                          HLT                     ;HIGH ORDER IS WRONG
006112  022703  000002                  CMP     #2,%2+1         ;IS LOW ORDER = 2
006116  001401                          BEQ     .+4
006120  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 77   MUL   77777 * #-2 = -1 2   PS = 11
                                ;*****************************************************************

006122  010701                          SCOPE                   ;TEST OF MULTIPLY
006124  012702  077777                  MOV     #77777,%2       ;LOAD MULTIPLICAN WITH 77777
006130  070227  177776                  MUL     #-2,%2          ;MULTIPLY 77777 * #-2
006134  013767  177776  006314          MOV     @#PS,PSW        ;SAVE PS
006142  122767  000011  006306          CMPB    #11,PSW         ;IS PS = 11
006150  001401                          BEQ     .+4
006152  000000                          HLT                     ;PS IS WRONG
006154  022702  177777                  CMP     #-1,%2          ;IS HIGH ORDER = -1
006160  001401                          BEQ     .+4
006162  000000                          HLT                     ;HIGH ORDER IS WRONG
006164  022703  000002                  CMP     #2,%211         ;IS LOW ORDER = 2
006170  001401                          BEQ     .+4
006172  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 100   MUL   125252 * #2 = -1 52524   PS = 11
                                ;*****************************************************************

006174  010701                          SCOPE                   ;TEST OF MULTIPLY
006176  012702  125252                  MOV     #125252,%2      ;LOAD MULTIPLICAN WITH 125252
006202  070227  000002                  MUL     #2,%2           ;MULTIPLY 125252 * #2
006206  013767  177776  006242          MOV     @#PS,PSW        ;SAVE PS
006214  122767  000011  006234          CMPB    #11,PSW         ;IS PS = 11
006222  001401                          BEQ     .+4
006224  000000                          HLT                     ;PS IS WRONG
006226  022702  177777                  CMP     #-1,%2          ;IS HIGH ORDER = -1
006232  001401                          BEQ     .+4
006234  000000                          HLT                     ;HIGH ORDER IS WRONG
006236  022703  052524                  CMP     #52524,%211     ;IS LOW ORDER = 52524
006242  001401                          BEQ     .+4
006244  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 101   MUL   2 * #125252 = -1 52524   PS = 11
                                ;*****************************************************************

006246  010701                          SCOPE                   ;TEST OF MULTIPLY
006250  012702  000002                  MOV     #2,%2           ;LOAD MULTIPLICAN WITH 2
006254  070227  125252                  MUL     #125252,%2      ;MULTIPLY 2 * #125252
006260  013767  177776  006170          MOV     @#PS,PSW        ;SAVE PS
006266  122767  000011  006162          CMPB    #11,PSW         ;IS PS = 11
006274  001401                          BEQ     .+4
006276  000000                          HLT                     ;PS IS WRONG
006300  022702  177777                  CMP     #-1,%2          ;IS HIGH ORDER = -1
006304  001401                          BEQ     .+4
006306  000000                          HLT                     ;HIGH ORDER IS WRONG
006310  022703  052524                  CMP     #52524,%211     ;IS LOW ORDER = 52524
006314  001401                          BEQ     .+4
006316  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 102   MUL   52525 * #2 = 0 125252   PS = 1
                                ;*****************************************************************

006320  010701                          SCOPE                   ;TEST OF MULTIPLY
006322  012702  052525                  MOV     #52525,%2       ;LOAD MULTIPLICAN WITH 52525
006326  070227  000002                  MUL     #2,%2           ;MULTIPLY 52525 * #2
006332  013767  177776  006116          MOV     @#PS,PSW        ;SAVE PS
006340  122767  000001  006110          CMPB    #1,PSW          ;IS PS = 1
006346  001401                          BEQ     .+4
006350  000000                          HLT                     ;PS IS WRONG
006352  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
006356  001401                          BEQ     .+4
006360  000000                          HLT                     ;HIGH ORDER IS WRONG
006362  022703  125252                  CMP     #125252,%211    ;IS LOW ORDER = 125252
006366  001401                          BEQ     .+4
006370  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 103   MUL   2 * #52525 = 0 125252   PS = 1
                                ;*****************************************************************

006372  010701                          SCOPE                   ;TEST OF MULTIPLY
006374  012702  000002                  MOV     #2,%2           ;LOAD MULTIPLICAN WITH 2
006400  070227  052525                  MUL     #52525,%2       ;MULTIPLY 2 * #52525
006404  013767  177776  006044          MOV     @#PS,PSW        ;SAVE PS
006412  122767  000001  006036          CMPB    #1,PSW          ;IS PS = 1
006420  001401                          BEQ     .+4
006422  000000                          HLT                     ;PS IS WRONG
006424  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
006430  001401                          BEQ     .+4
006432  000000                          HLT                     ;HIGH ORDER IS WRONG
006434  022703  125252                  CMP     #125252,%2!1    ;IS LOW ORDER = 125252
006440  001401                          BEQ     .+4
006442  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 104   MUL   125252 * #40000 = 165252 100000   PS = 11
                                ;*****************************************************************

006444  010701                          SCOPE                   ;TEST OF MULTIPLY
006446  012702  125252                  MOV     #125252,%2      ;LOAD MULTIPLICAN WITH 125252
006452  070227  040000                  MUL     #40000,%2       ;MULTIPLY 125252 * #40000
006456  013767  177776  005772          MOV     @#PS,PSW        ;SAVE PS
006464  122767  000011  005764          CMPB    #11,PSW         ;IS PS = 11
006472  001401                          BEQ     .+4
006474  000000                          HLT                     ;PS IS WRONG
006476  022702  165252                  CMP     #165252,%2      ;IS HIGH ORDER = 165252
006502  001401                          BEQ     .+4
006504  000000                          HLT                     ;HIGH ORDER IS WRONG
006506  022703  100000                  CMP     #100000,%2!1    ;IS LOW ORDER = 100000
006512  001401                          BEQ     .+4
006514  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 105   MUL   40000 * #125252 = 165252 100000   PS = 11
                                ;*****************************************************************

006516  010701                          SCOPE                   ;TEST OF MULTIPLY
006520  012702  040000                  MOV     #40000,%2       ;LOAD MULTIPLICAN WITH 40000
006524  070227  125252                  MUL     #125252,%2      ;MULTIPLY 40000 * #125252
006530  013767  177776  005720          MOV     @#PS,PSW        ;SAVE PS
006536  122767  000011  005712          CMPB    #11,PSW         ;IS PS = 11
006544  001401                          BEQ     .+4
006546  000000                          HLT                     ;PS IS WRONG
006550  022702  165252                  CMP     #165252,%2      ;IS HIGH ORDER = 165252
006554  001401                          BEQ     .+4
006556  000000                          HLT                     ;HIGH ORDER IS WRONG
006560  022703  100000                  CMP     #100000,%2!1    ;IS LOW ORDER = 100000
006564  001401                          BEQ     .+4
006566  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 106   MUL   100000 * #100000 = 40000 0   PS = 1
                                ;*****************************************************************

006570  010701                          SCOPE                   ;TEST OF MULTIPLY
006572  012702  100000                  MOV     #100000,%2      ;LOAD MULTIPLICAN WITH 100000
006576  070227  100000                  MUL     #100000,%2      ;MULTIPLY 100000 * #100000
006602  013767  177776  005646          MOV     @#PS,PSW        ;SAVE PS
006610  122767  000001  005640          CMPB    #1,PSW          ;IS PS = 1
006616  001401                          BEQ     .+4
006620  000000                          HLT                     ;PS IS WRONG
006622  022702  040000                  CMP     #40000,%2       ;IS HIGH ORDER = 40000
006626  001401                          BEQ     .+4
006630  000000                          HLT                     ;HIGH ORDER IS WRONG
006632  022703  000000                  CMP     #0,%2!1         ;IS LOW ORDER = 0
006636  001401                          BEQ     .+4
006640  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 107   MUL   70707 * #70707 = 31221 44261   PS = 1
                                ;*****************************************************************

006642  010701                          SCOPE                   ;TEST OF MULTIPLY
006644  012702  070707                  MOV     #70707,%2       ;LOAD MULTIPLICAN WITH 70707
006650  070227  070707                  MUL     #70707,%2       ;MULTIPLY 70707 * #70707
006654  013767  177776  005574          MOV     @#PS,PSW        ;SAVE PS
006662  122767  000001  005566          CMPB    #1,PSW          ;IS PS = 1
006670  001401                          BEQ     .+4
006672  000000                          HLT                     ;PS IS WRONG
006674  022702  031221                  CMP     #31221,%2       ;IS HIGH ORDER = 31221
006700  001401                          BEQ     .+4
006702  000000                          HLT                     ;HIGH ORDER IS WRONG
006704  022703  044261                  CMP     #44261,%211     ;IS LOW ORDER = 44261
006710  001401                          BEQ     .+4
006712  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 110   MUL   107070 * #107070 = 31222 26100   PS = 1
                                ;*****************************************************************

006714  010701                          SCOPE                   ;TEST OF MULTIPLY
006716  012702  107070                  MOV     #107070,%2      ;LOAD MULTIPLICAN WITH 107070
006722  070227  107070                  MUL     #107070,%2      ;MULTIPLY 107070 * #107070
006726  013767  177776  005522          MOV     @#PS,PSW        ;SAVE PS
006734  122767  000001  005514          CMPB    #1,PSW          ;IS PS = 1
006742  001401                          BEQ     .+4
006744  000000                          HLT                     ;PS IS WRONG
006746  022702  031222                  CMP     #31222,%2       ;IS HIGH ORDER = 31222
006752  001401                          BEQ     .+4
006754  000000                          HLT                     ;HIGH ORDER IS WRONG
006756  022703  026100                  CMP     #26100,%211     ;IS LOW ORDER = 26100
006762  001401                          BEQ     .+4
006764  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 111   MUL   100000 * #77777 = 140000 100000   PS = 11
                                ;*****************************************************************

006766  010701                          SCOPE                   ;TEST OF MULTIPLY
006770  012702  100000                  MOV     #100000,%2      ;LOAD MULTIPLICAN WITH 100000
006774  070227  077777                  MUL     #77777,%2       ;MULTIPLY 100000 * #77777
007000  013767  177776  005450          MOV     @#PS,PSW        ;SAVE PS
007006  122767  000011  005442          CMPB    #11,PSW         ;IS PS = 11
007014  001401                          BEQ     .+4
007016  000000                          HLT                     ;PS IS WRONG
007020  022702  140000                  CMP     #140000,%2      ;IS HIGH ORDER = 140000
007024  001401                          BEQ     .+4
007026  000000                          HLT                     ;HIGH ORDER IS WRONG
007030  022703  100000                  CMP     #100000,%211    ;IS LOW ORDER = 100000
007034  001401                          BEQ     .+4
007036  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 112   MUL   77777 * #100000 = 140000 100000   PS = 11
                                ;*****************************************************************

007040  010701                          SCOPE                   ;TEST OF MULTIPLY
007042  012702  077777                  MOV     #77777,%2       ;LOAD MULTIPLICAN WITH 77777
007046  070227  100000                  MUL     #100000,%2      ;MULTIPLY 77777 * #100000
007052  013767  177776  005376          MOV     @#PS,PSW        ;SAVE PS
007060  122767  000011  005370          CMPB    #11,PSW         ;IS PS = 11
007066  001401                          BEQ     .+4
007070  000000                          HLT                     ;PS IS WRONG
007072  022702  140000                  CMP     #140000,%2      ;IS HIGH ORDER = 140000
007076  001401                          BEQ     .+4
007100  000000                          HLT                     ;HIGH ORDER IS WRONG
007102  022703  100000                  CMP     #100000,%211    ;IS LOW ORDER = 100000
007106  001401                          BEQ     .+4
007110  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 113   MUL   157634 * #104031 = 7453 133074   PS = 1
                                ;*****************************************************************

007112  010701                          SCOPE                   ;TEST OF MULTIPLY
007114  012702  157634                  MOV     #157634,%2      ;LOAD MULTIPLICAN WITH 157634
007120  070227  104031                  MUL     #104031,%2      ;MULTIPLY 157634 * #104031
007124  013767  177776  005324          MOV     @#PS,PSW        ;SAVE PS
007132  122767  000001  005316          CMPB    #1,PSW          ;IS PS = 1
007140  001401                          BEQ     .+4
007142  000000                          HLT                     ;PS IS WRONG
007144  022702  007453                  CMP     #7453,%2        ;IS HIGH ORDER = 7453
007150  001401                          BEQ     .+4
007152  000000                          HLT                     ;HIGH ORDER IS WRONG
007154  022703  133074                  CMP     #133074,%211    ;IS LOW ORDER = 133074
007160  001401                          BEQ     .+4
007162  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 114   MUL   104031 * #157634 = 7453 133074   PS = 1
                                ;*****************************************************************

007164  010701                          SCOPE                   ;TEST OF MULTIPLY
007166  012702  104031                  MOV     #104031,%2      ;LOAD MULTIPLICAN WITH 104031
007172  070227  157634                  MUL     #157634,%2      ;MULTIPLY 104031 * #157634
007176  013767  177776  005252          MOV     @#PS,PSW        ;SAVE PS
007204  122767  000001  005244          CMPB    #1,PSW          ;IS PS = 1
007212  001401                          BEQ     .+4
007214  000000                          HLT                     ;PS IS WRONG
007216  022702  007453                  CMP     #7453,%2        ;IS HIGH ORDER = 7453
007222  001401                          BEQ     .+4
007224  000000                          HLT                     ;HIGH ORDER IS WRONG
007226  022703  133074                  CMP     #133074,%211    ;IS LOW ORDER = 133074
007232  001401                          BEQ     .+4
007234  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 115   MUL   152210 * #0 = 0 0   PS = 4
                                ;*****************************************************************

007236  010701                          SCOPE                   ;TEST OF MULTIPLY
007240  012702  152210                  MOV     #152210,%2      ;LOAD MULTIPLICAN WITH 152210
007244  070227  000000                  MUL     #0,%2           ;MULTIPLY 152210 * #0
007250  013767  177776  005200          MOV     @#PS,PSW        ;SAVE PS
007256  122767  000004  005172          CMPB    #4,PSW          ;IS PS = 4
007264  001401                          BEQ     .+4
007266  000000                          HLT                     ;PS IS WRONG
007270  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
007274  001401                          BEQ     .+4
007276  000000                          HLT                     ;HIGH ORDER IS WRONG
007300  022703  000000                  CMP     #0,%211         ;IS LOW ORDER = 0
007304  001401                          BEQ     .+4
007306  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 116   MUL   0 * #152210 = 0 0   PS = 4
                                ;*****************************************************************

007310  010701                          SCOPE                   ;TEST OF MULTIPLY
007312  012702  000000                  MOV     #0,%2           ;LOAD MULTIPLICAN WITH 0
007316  070227  152210                  MUL     #152210,%2      ;MULTIPLY 0 * #152210
007322  013767  177776  005126          MOV     @#PS,PSW        ;SAVE PS
007330  122767  000004  005120          CMPB    #4,PSW          ;IS PS = 4
007336  001401                          BEQ     .+4
007340  000000                          HLT                     ;PS IS WRONG
007342  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
007346  001401                          BEQ     .+4
007350  000000                          HLT                     ;HIGH ORDER IS WRONG
007352  022703  000000                  CMP     #0,%211         ;IS LOW ORDER = 0
007356  001401                          BEQ     .+4
007360  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 117   MUL   -1 * #0 = 0 0   PS = 4
                                ;*****************************************************************

007362  010701                          SCOPE                   ;TEST OF MULTIPLY
007364  012702  177777                  MOV     #-1,%2          ;LOAD MULTIPLICAN WITH -1
007370  070227  000000                  MUL     #0,%2           ;MULTIPLY -1 * #0
007374  013767  177776  005054          MOV     @#PS,PSW        ;SAVE PS
007402  122767  000004  005046          CMPB    #4,PSW          ;IS PS = 4
007410  001401                          BEQ     .+4
007412  000000                          HLT                     ;PS IS WRONG
007414  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
007420  001401                          BEQ     .+4
007422  000000                          HLT                     ;HIGH ORDER IS WRONG
007424  022703  000000                  CMP     #0,%2!1         ;IS LOW ORDER = 0
007430  001401                          BEQ     .+4
007432  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 120   MUL   0 * #-1 = 0 0   PS = 4
                                ;*****************************************************************

007434  010701                          SCOPE                   ;TEST OF MULTIPLY
007436  012702  000000                  MOV     #0,%2           ;LOAD MULTIPLICAN WITH 0
007442  070227  177777                  MUL     #-1,%2          ;MULTIPLY 0 * #-1
007446  013767  177776  005002          MOV     @#PS,PSW        ;SAVE PS
007454  122767  000004  004774          CMPB    #4,PSW          ;IS PS = 4
007462  001401                          BEQ     .+4
007464  000000                          HLT                     ;PS IS WRONG
007466  022702  000000                  CMP     #0,%2           ;IS HIGH ORDER = 0
007472  001401                          BEQ     .+4
007474  000000                          HLT                     ;HIGH ORDER IS WRONG
007476  022703  000000                  CMP     #0,%2!1         ;IS LOW ORDER = 0
007502  001401                          BEQ     .+4
007504  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 121   MUL   -1 * #1 = -1 -1   PS = 10
                                ;*****************************************************************

007506  010701                          SCOPE                   ;TEST OF MULTIPLY
007510  012703  177777                  MOV     #-1,%3          ;LOAD MULTIPLICAN WITH -1
007514  070327  000001                  MUL     #1,%3           ;MULTIPLY -1 * #1
007520  013767  177776  004730          MOV     @#PS,PSW        ;SAVE PS
007526  122767  000010  004722          CMPB    #10,PSW         ;IS PS = 10
007534  001401                          BEQ     .+4
007536  000000                          HLT                     ;PS IS WRONG
007540  022703  177777                  CMP     #-1,%3          ;IS HIGH ORDER = -1
007544  001401                          BEQ     .+4
007546  000000                          HLT                     ;HIGH ORDER IS WRONG
007550  022703  177777                  CMP     #-1,%3!1        ;IS LOW ORDER = -1
007554  001401                          BEQ     .+4
007556  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 122   MUL   -1 * #0 = 0 0   PS = 4
                                ;*****************************************************************

007560  010701                          SCOPE                   ;TEST OF MULTIPLY
007562  012703  177777                  MOV     #-1,%3          ;LOAD MULTIPLICAN WITH -1
007566  070327  000000                  MUL     #0,%3           ;MULTIPLY -1 * #0
007572  013767  177776  004656          MOV     @#PS,PSW        ;SAVE PS
007600  122767  000004  004650          CMPB    #4,PSW          ;IS PS = 4
007606  001401                          BEQ     .+4
007610  000000                          HLT                     ;PS IS WRONG
007612  022703  000000                  CMP     #0,%3           ;IS HIGH ORDER = 0
007616  001401                          BEQ     .+4
007620  000000                          HLT                     ;HIGH ORDER IS WRONG
007622  022703  000000                  CMP     #0,%3!1         ;IS LOW ORDER = 0
007626  001401                          BEQ     .+4
007630  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 123   MUL   77777 * #100000 = 100000 100000   PS = 11
                                ;*****************************************************************

007632  010701                          SCOPE                   ;TEST OF MULTIPLY
007634  012703  077777                  MOV     #77777,%3       ;LOAD MULTIPLICAN WITH 77777
007640  070327  100000                  MUL     #100000,%3      ;MULTIPLY 77777 * #100000
007644  013767  177776  004604          MOV     @#PS,PSW        ;SAVE PS
007652  122767  000011  004576          CMPB    #11,PSW         ;IS PS = 11
007660  001401                          BEQ     .+4
007662  000000                          HLT                     ;PS IS WRONG
007664  022703  100000                  CMP     #100000,%3      ;IS HIGH ORDER = 100000
007670  001401                          BEQ     .+4
007672  000000                          HLT                     ;HIGH ORDER IS WRONG
007674  022703  100000                  CMP     #100000,%3!1    ;IS LOW ORDER = 100000
007700  001401                          BEQ     .+4
007702  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 124   MUL   -1 * #77777 = 100001 100001   PS = 10
                                ;*****************************************************************

007704  010701                          SCOPE                   ;TEST OF MULTIPLY
007706  012703  177777                  MOV     #-1,%3          ;LOAD MULTIPLICAN WITH -1
007712  070327  077777                  MUL     #77777,%3       ;MULTIPLY -1 * #77777
007716  013767  177776  004532          MOV     @#PS,PSW        ;SAVE PS
007724  122767  000010  004524          CMPB    #10,PSW         ;IS PS = 10
007732  001401                          BEQ     .+4
007734  000000                          HLT                     ;PS IS WRONG
007736  022703  100001                  CMP     #100001,%3      ;IS HIGH ORDER = 100001
007742  001401                          BEQ     .+4
007744  000000                          HLT                     ;HIGH ORDER IS WRONG
007746  022703  100001                  CMP     #100001,%3!1    ;IS LOW ORDER = 100001
007752  001401                          BEQ     .+4
007754  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 125   MUL   77777 * #77777 = 1 1   PS = 1
                                ;*****************************************************************

007756  010701                          SCOPE                   ;TEST OF MULTIPLY
007760  012703  077777                  MOV     #77777,%3       ;LOAD MULTIPLICAN WITH 77777
007764  070327  077777                  MUL     #77777,%3       ;MULTIPLY 77777 * #77777
007770  013767  177776  004460          MOV     @#PS,PSW        ;SAVE PS
007776  122767  000001  004452          CMPB    #1,PSW          ;IS PS = 1
010004  001401                          BEQ     .+4
010006  000000                          HLT                     ;PS IS WRONG
010010  022703  000001                  CMP     #1,%3           ;IS HIGH ORDER = 1
010014  001401                          BEQ     .+4
010016  000000                          HLT                     ;HIGH ORDER IS WRONG
010020  022703  000001                  CMP     #1,%3!1         ;IS LOW ORDER = 1
010024  001401                          BEQ     .+4
010026  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 126   MUL   2 * #2 = 4 4   PS = 0
                                ;*****************************************************************

010030  010701                          SCOPE                   ;TEST OF MULTIPLY
010032  012703  000002                  MOV     #2,%3           ;LOAD MULTIPLICAN WITH 2
010036  070327  000002                  MUL     #2,%3           ;MULTIPLY 2 * #2
010042  013767  177776  004406          MOV     @#PS,PSW        ;SAVE PS
010050  122767  000000  004400          CMPB    #0,PSW          ;IS PS = 0
010056  001401                          BEQ     .+4
010060  000000                          HLT                     ;PS IS WRONG
010062  022703  000004                  CMP     #4,%3           ;IS HIGH ORDER = 4
010066  001401                          BEQ     .+4
010070  000000                          HLT                     ;HIGH ORDER IS WRONG
010072  022703  000004                  CMP     #4,%3!1         ;IS LOW ORDER = 4
010076  001401                          BEQ     .+4
010100  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 127   MUL   0 * #0 = 0 0   PS = 4
                                ;*****************************************************************

010102  010701                          SCOPE                   ;TEST OF MULTIPLY
010104  012704  000000                  MOV     #0,%4           ;LOAD MULTIPLICAN WITH 0
010110  070427  000000                  MUL     #0,%4           ;MULTIPLY 0 * #0
010114  013767  177776  004334          MOV     @#PS,PSW        ;SAVE PS
010122  122767  000004  004326          CMPB    #4,PSW          ;IS PS = 4
010130  001401                          BEQ     .+4
010132  000000                          HLT                     ;PS IS WRONG
010134  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
010140  001401                          BEQ     .+4
010142  000000                          HLT                     ;HIGH ORDER IS WRONG
010144  022705  000000                  CMP     #0,%4!1         ;IS LOW ORDER = 0
010150  001401                          BEQ     .+4
010152  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 130   MUL   0 * #1 = 0 0   PS = 4
                                ;*****************************************************************

010154  010701                          SCOPE                   ;TEST OF MULTIPLY
010156  012704  000000                  MOV     #0,%4           ;LOAD MULTIPLICAN WITH 0
010162  070427  000001                  MUL     #1,%4           ;MULTIPLY 0 * #1
010166  013767  177776  004262          MOV     @#PS,PSW        ;SAVE PS
010174  122767  000004  004254          CMPB    #4,PSW          ;IS PS = 4
010202  001401                          BEQ     .+4
010204  000000                          HLT                     ;PS IS WRONG
010206  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
010212  001401                          BEQ     .+4
010214  000000                          HLT                     ;HIGH ORDER IS WRONG
010216  022705  000000                  CMP     #0,%4!1         ;IS LOW ORDER = 0
010222  001401                          BEQ     .+4
010224  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 131   MUL   1 * #0 = 0 0   PS = 4
                                ;*****************************************************************

010226  010701                          SCOPE                   ;TEST OF MULTIPLY
010230  012704  000001                  MOV     #1,%4           ;LOAD MULTIPLICAN WITH 1
010234  070427  000000                  MUL     #0,%4           ;MULTIPLY 1 * #0
010240  013767  177776  004210          MOV     @#PS,PSW        ;SAVE PS
010246  122767  000004  004202          CMPB    #4,PSW          ;IS PS = 4
010254  001401                          BEQ     .+4
010256  000000                          HLT                     ;PS IS WRONG
010260  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
010264  001401                          BEQ     .+4
010266  000000                          HLT                     ;HIGH ORDER IS WRONG
010270  022705  000000                  CMP     #0,%4!1         ;IS LOW ORDER = 0
010274  001401                          BEQ     .+4
010276  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 132   MUL   -1 * #1 = -1 -1   PS = 10
                                ;*****************************************************************

010300  010701                          SCOPE                   ;TEST OF MULTIPLY
010302  012704  177777                  MOV     #-1,%4          ;LOAD MULTIPLICAN WITH -1
010306  070427  000001                  MUL     #1,%4           ;MULTIPLY -1 * #1
010312  013767  177776  004136          MOV     @#PS,PSW        ;SAVE PS
010320  122767  000010  004130          CMPB    #10,PSW         ;IS PS = 10
010326  001401                          BEQ     .+4
010330  000000                          HLT                     ;PS IS WRONG
010332  022704  177777                  CMP     #-1,%4          ;IS HIGH ORDER = -1
010336  001401                          BEQ     .+4
010340  000000                          HLT                     ;HIGH ORDER IS WRONG
010342  022705  177777                  CMP     #-1,%4!1        ;IS LOW ORDER = -1
010346  001401                          BEQ     .+4
010350  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 133   MUL   1 * 0-1 = -1 -1   PS = 10
                                ;*****************************************************************

010352  010701                          SCOPE                   ;TEST OF MULTIPLY
010354  012704  000001                  MOV     #1,%4           ;LOAD MULTIPLICAN WITH 1
010360  070427  177777                  MUL     #-1,%4          ;MULTIPLY 1 * 0-1
010364  013767  177776  004064          MOV     @#PS,PSW        ;SAVE PS
010372  122767  000010  004056          CMPB    #10,PSW         ;IS PS = 10
010400  001401                          BEQ     .+4
010402  000000                          HLT                     ;PS IS WRONG
010404  022704  177777                  CMP     #-1,%4          ;IS HIGH ORDER = -1
010410  001401                          BEQ     .+4
010412  000000                          HLT                     ;HIGH ORDER IS WRONG
010414  022705  177777                  CMP     #-1,%4!1        ;IS LOW ORDER = -1
010420  001401                          BEQ     .+4
010422  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 134   MUL   1 * 2 = 0 2   PS = 0
                                ;*****************************************************************

010424  010701                          SCOPE                   ;TEST OF MULTIPLY
010426  012704  000001                  MOV     #1,%4           ;LOAD MULTIPLICAN WITH 1
010432  070427  000002                  MUL     #2,%4           ;MULTIPLY 1 * 2
010436  013767  177776  004012          MOV     @#PS,PSW        ;SAVE PS
010444  122767  000000  004004          CMPB    #0,PSW          ;IS PS = 0
010452  001401                          BEQ     .+4
010454  000000                          HLT                     ;PS IS WRONG
010456  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
010462  001401                          BEQ     .+4
010464  000000                          HLT                     ;HIGH ORDER IS WRONG
010466  022705  000002                  CMP     #2,%4!1         ;IS LOW ORDER = 2
010472  001401                          BEQ     .+4
010474  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 135   MUL   2 * 2 = 0 4   PS = 0
                                ;*****************************************************************

010476  010701                          SCOPE                   ;TEST OF MULTIPLY
010500  012704  000002                  MOV     #2,%4           ;LOAD MULTIPLICAN WITH 2
010504  070427  000002                  MUL     #2,%4           ;MULTIPLY 2 * 2
010510  013767  177776  003740          MOV     @#PS,PSW        ;SAVE PS
010516  122767  000000  003732          CMPB    #0,PSW          ;IS PS = 0
010524  001401                          BEQ     .+4
010526  000000                          HLT                     ;PS IS WRONG
010530  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
010534  001401                          BEQ     .+4
010536  000000                          HLT                     ;HIGH ORDER IS WRONG
010540  022705  000004                  CMP     #4,%4!1         ;IS LOW ORDER = 4
010544  001401                          BEQ     .+4
010546  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 136   MUL   1000 * 200 = 1 0   PS = 1
                                ;*****************************************************************

010550  010701                          SCOPE                   ;TEST OF MULTIPLY
010552  012704  001000                  MOV     #1000,%4        ;LOAD MULTIPLICAN WITH 1000
010556  070427  000200                  MUL     #200,%4         ;MULTIPLY 1000 * #200
010562  013767  177776  003666          MOV     @#PS,PSW        ;SAVE PS
010570  122767  000001  003660          CMPB    #1,PSW          ;IS PS = 1
010576  001401                          BEQ     .+4
010600  000000                          HLT                     ;PS IS WRONG
010602  022704  000001                  CMP     #1,%4           ;IS HIGH ORDER = 1
010606  001401                          BEQ     .+4
010610  000000                          HLT                     ;HIGH ORDER IS WRONG
010612  022705  000000                  CMP     #0,%4!1         ;IS LOW ORDER = 0
010616  001401                          BEQ     .+4
010620  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 137   MUL   200 * #1000 = 1 0   PS = 1
                                ;*****************************************************************

010622  010701                          SCOPE                   ;TEST OF MULTIPLY
010624  012704  000200                  MOV     #200,%4         ;LOAD MULTIPLICAN WITH 200
010630  070427  001000                  MUL     #1000,%4        ;MULTIPLY 200 * #1000
010634  013767  177776  003614          MOV     @#PS,PSW        ;SAVE PS
010642  122767  000001  003606          CMPB    #1,PSW          ;IS PS = 1
010650  001401                          BEQ     .+4
010652  000000                          HLT                     ;PS IS WRONG
010654  022704  000001                  CMP     #1,%4           ;IS HIGH ORDER = 1
010660  001401                          BEQ     .+4
010662  000000                          HLT                     ;HIGH ORDER IS WRONG
010664  022705  000000                  CMP     #0,%4!1         ;IS LOW ORDER = 0
010670  001401                          BEQ     .+4
010672  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 140   MUL   77777 * #2 = 0 177776   PS = 1
                                ;*****************************************************************

010674  010701                          SCOPE                   ;TEST OF MULTIPLY
010676  012704  077777                  MOV     #77777,%4       ;LOAD MULTIPLICAN WITH 77777
010702  070427  000002                  MUL     #2,%4           ;MULTIPLY 77777 * #2
010706  013767  177776  003542          MOV     @#PS,PSW        ;SAVE PS
010714  122767  000001  003534          CMPB    #1,PSW          ;IS PS = 1
010722  001401                          BEQ     .+4
010724  000000                          HLT                     ;PS IS WRONG
010726  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
010732  001401                          BEQ     .+4
010734  000000                          HLT                     ;HIGH ORDER IS WRONG
010736  022705  177776                  CMP     #177776,%4!1    ;IS LOW ORDER = 177776
010742  001401                          BEQ     .+4
010744  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 141   MUL   2 * 77777 = 0 177776   PS = 1
                                ;*****************************************************************

010746  010701                          SCOPE                   ;TEST OF MULTIPLY
010750  012704  000002                  MOV     #2,%4           ;LOAD MULTIPLICAN WITH 2
010754  070427  077777                  MUL     #77777,%4       ;MULTIPLY 2 * #77777
010760  013767  177776  003470          MOV     @#PS,PSW        ;SAVE PS
010766  122767  000001  003462          CMPB    #1,PSW          ;IS PS = 1
010774  001401                          BEQ     .+4
010776  000000                          HLT                     ;PS IS WRONG
011000  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
011004  001401                          BEQ     .+4
011006  000000                          HLT                     ;HIGH ORDER IS WRONG
011010  022705  177776                  CMP     #177776,%4!1    ;IS LOW ORDER = 177776
011014  001401                          BEQ     .+4
011016  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 142   MUL   7777 * #10 = 0 77770   PS = 0
                                ;*****************************************************************

011020  010701                          SCOPE                   ;TEST OF MULTIPLY
011022  012704  007777                  MOV     #7777,%4        ;LOAD MULTIPLICAN WITH 7777
011026  070427  000010                  MUL     #10,%4          ;MULTIPLY 7777 * #10
011032  013767  177776  003416          MOV     @#PS,PSW        ;SAVE PS
011040  122767  000000  003410          CMPB    #0,PSW          ;IS PS = 0
011046  001401                          BEQ     .+4
011050  000000                          HLT                     ;PS IS WRONG
011052  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
011056  001401                          BEQ     .+4
011060  000000                          HLT                     ;HIGH ORDER IS WRONG
011062  022705  077770                  CMP     #77770,%4!1     ;IS LOW ORDER = 77770
011066  001401                          BEQ     .+4
011070  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 143   MUL   10 * 77777 = 0 77770   PS = 0
                                ;*****************************************************************

011072  010701                          SCOPE                   ;TEST OF MULTIPLY
011074  012704  000010                  MOV     #10,%4          ;LOAD MULTIPLICAN WITH 10
011100  070427  077777                  MUL     #77777,%4       ;MULTIPLY 10 * 77777
011104  013767  177776  003344          MOV     @#PS,PSW        ;SAVE PS
011112  122767  000000  003336          CMPB    #0,PSW          ;IS PS = 0
011120  001401                          BEQ     .+4
011122  000000                          HLT                     ;PS IS WRONG
011124  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
011130  001401                          BEQ     .+4
011132  000000                          HLT                     ;HIGH ORDER IS WRONG
011134  022705  077770                  CMP     #77770,%5!1     ;IS LOW ORDER = 77770
011140  001401                          BEQ     .+4
011142  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 144   MUL   77777 * 77777 = 37777 1   PS = 1
                                ;*****************************************************************

011144  010701                          SCOPE                   ;TEST OF MULTIPLY
011146  012704  077777                  MOV     #77777,%4       ;LOAD MULTIPLICAN WITH 77777
011152  070427  077777                  MUL     #77777,%4       ;MULTIPLY 77777 * #77777
011156  013767  177776  003272          MOV     @#PS,PSW        ;SAVE PS
011164  122767  000001  003254          CMPB    #1,PSW          ;IS PS = 1
011172  001401                          BEQ     .+4
011174  000000                          HLT                     ;PS IS WRONG
011176  022704  037777                  CMP     #37777,%4       ;IS HIGH ORDER = 37777
011202  001401                          BEQ     .+4
011204  000000                          HLT                     ;HIGH ORDER IS WRONG
011206  022705  000001                  CMP     #1,%5!1         ;IS LOW ORDER = 1
011212  001401                          BEQ     .+4
011214  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 145   MUL   77777 * 1 = 0 77777   PS = 0
                                ;*****************************************************************

011216  010701                          SCOPE                   ;TEST OF MULTIPLY
011220  012704  077777                  MOV     #77777,%4       ;LOAD MULTIPLICAN WITH 77777
011224  070427  000001                  MUL     #1,%4           ;MULTIPLY 77777 * #1
011230  013767  177776  003220          MOV     @#PS,PSW        ;SAVE PS
011236  122767  000000  003212          CMPB    #0,PSW          ;IS PS = 0
011244  001401                          BEQ     .+4
011246  000000                          HLT                     ;PS IS WRONG
011250  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
011254  001401                          BEQ     .+4
011256  000000                          HLT                     ;HIGH ORDER IS WRONG
011260  022705  077777                  CMP     #77777,%5!1     ;IS LOW ORDER = 77777
011264  001401                          BEQ     .+4
011266  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 146   MUL   1 * 77777 = 0 77777   PS = 0
                                ;*****************************************************************

011270  010701                          SCOPE                   ;TEST OF MULTIPLY
011272  012704  000001                  MOV     #1,%4           ;LOAD MULTIPLICAN WITH 1
011276  070427  077777                  MUL     #77777,%4       ;MULTIPLY 1 * #77777
011302  013767  177776  003146          MOV     @#PS,PSW        ;SAVE PS
011310  122767  000000  003140          CMPB    #0,PSW          ;IS PS = 0
011316  001401                          BEQ     .+4
011320  000000                          HLT                     ;PS IS WRONG
011322  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
011326  001401                          BEQ     .+4
011330  000000                          HLT                     ;HIGH ORDER IS WRONG
011332  022705  077777                  CMP     #77777,%5!1     ;IS LOW ORDER = 77777
011336  001401                          BEQ     .+4
011340  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 147   MUL   77777 * #-1 = -1 100001   PS = 10
                                ;*****************************************************************

011342  010701                          SCOPE                   ;TEST OF MULTIPLY
011344  012704  077777                  MOV     #77777,%4       ;LOAD MULTIPLICAN WITH 77777
011350  070427  177777                  MUL     #-1,%4          ;MULTIPLY 77777 * #-1
011354  013767  177776  003074          MOV     @#PS,PSW        ;SAVE PS
011362  122767  000010  003066          CMPB    #10,PSW         ;IS PS = 10
011370  001401                          BEQ     .+4
011372  000000                          HLT                     ;PS IS WRONG
011374  022704  177777                  CMP     #-1,%4          ;IS HIGH ORDER = -1
011400  001401                          BEQ     .+4
011402  000000                          HLT                     ;HIGH ORDER IS WRONG
011404  022705  100001                  CMP     #100001,%4!1    ;IS LOW ORDER = 100001
011410  001401                          BEQ     .+4
011412  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 150   MUL   -1 * #77777 = -1 100001   PS = 10
                                ;*****************************************************************

011414  010701                          SCOPE                   ;TEST OF MULTIPLY
011416  012704  177777                  MOV     #-1,%4          ;LOAD MULTIPLICAN WITH -1
011422  070427  077777                  MUL     #77777,%4       ;MULTIPLY -1 * #77777
011426  013767  177776  003022          MOV     @#PS,PSW        ;SAVE PS
011434  122767  000010  003014          CMPB    #10,PSW         ;IS PS = 10
011442  001401                          BEQ     .+4
011444  000000                          HLT                     ;PS IS WRONG
011446  022704  177777                  CMP     #-1,%4          ;IS HIGH ORDER = -1
011452  001401                          BEQ     .+4
011454  000000                          HLT                     ;HIGH ORDER IS WRONG
011456  022705  100001                  CMP     #100001,%4!1    ;IS LOW ORDER = 100001
011462  001401                          BEQ     .+4
011464  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 151   MUL   -2 * #77777 = -1 2   PS = 11
                                ;*****************************************************************

011466  010701                          SCOPE                   ;TEST OF MULTIPLY
011470  012704  177776                  MOV     #-2,%4          ;LOAD MULTIPLICAN WITH -2
011474  070427  077777                  MUL     #77777,%4       ;MULTIPLY -2 * #77777
011500  013767  177776  002750          MOV     @#PS,PSW        ;SAVE PS
011506  122767  000011  002742          CMPB    #11,PSW         ;IS PS = 11
011514  001401                          BEQ     .+4
011516  000000                          HLT                     ;PS IS WRONG
011520  022704  177777                  CMP     #-1,%4          ;IS HIGH ORDER = -1
011524  001401                          BEQ     .+4
011526  000000                          HLT                     ;HIGH ORDER IS WRONG
011530  022705  000002                  CMP     #2,%4!1         ;IS LOW ORDER = 2
011534  001401                          BEQ     .+4
011536  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 152   MUL   77777 * #-2 = -1 2   PS = 11
                                ;*****************************************************************

011540  010701                          SCOPE                   ;TEST OF MULTIPLY
011542  012704  077777                  MOV     #77777,%4       ;LOAD MULTIPLICAN WITH 77777
011546  070427  177776                  MUL     #-2,%4          ;MULTIPLY 77777 * #-2
011552  013767  177776  002676          MOV     @#PS,PSW        ;SAVE PS
011560  122767  000011  002670          CMPB    #11,PSW         ;IS PS = 11
011566  001401                          BEQ     .+4
011570  000000                          HLT                     ;PS IS WRONG
011572  022704  177777                  CMP     #-1,%4          ;IS HIGH ORDER = -1
011576  001401                          BEQ     .+4
011600  000000                          HLT                     ;HIGH ORDER IS WRONG
011602  022705  000002                  CMP     #2,%4!1         ;IS LOW ORDER = 2
011606  001401                          BEQ     .+4
011610  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 153   MUL   125252 * #2 = -1 52624   PS = 11
                                ;*****************************************************************

011612  010701                          SCOPE                   ;TEST OF MULTIPLY
011614  012704  125252                  MOV     #125252,%4      ;LOAD MULTIPLICAN WITH 125252
011620  070427  000002                  MUL     #2,%4           ;MULTIPLY 125252 * #2
011624  013767  177776  002624          MOV     @#PS,PSW        ;SAVE PS
011632  122767  000011  002616          CMPB    #11,PSW         ;IS PS = 11
011640  001401                          BEQ     .+4
011642  000000                          HLT                     ;PS IS WRONG
011644  022704  177777                  CMP     #-1,%4          ;IS HIGH ORDER = -1
011650  001401                          BEQ     .+4
011652  000000                          HLT                     ;HIGH ORDER IS WRONG
011654  022705  052524                  CMP     #52524,%411     ;IS LOW ORDER = 52524
011660  001401                          BEQ     .+4
011662  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 154   MUL   2 * #125252 = -1 52524   PS = 11
                                ;*****************************************************************

011664  010701                          SCOPE                   ;TEST OF MULTIPLY
011666  012704  000002                  MOV     #2,%4           ;LOAD MULTIPLICAN WITH 2
011672  070427  125252                  MUL     #125252,%4      ;MULTIPLY 2 * #125252
011676  013767  177776  002552          MOV     @#PS,PSW        ;SAVE PS
011704  122767  000011  002544          CMPB    #11,PSW         ;IS PS = 11
011712  001401                          BEQ     .+4
011714  000000                          HLT                     ;PS IS WRONG
011716  022704  177777                  CMP     #-1,%4          ;IS HIGH ORDER = -1
011722  001401                          BEQ     .+4
011724  000000                          HLT                     ;HIGH ORDER IS WRONG
011726  022705  052524                  CMP     #52524,%411     ;IS LOW ORDER = 52524
011732  001401                          BEQ     .+4
011734  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 155   MUL   52525 * #2 = 0 125252   PS = 1
                                ;*****************************************************************

011736  010701                          SCOPE                   ;TEST OF MULTIPLY
011740  012704  052525                  MOV     #52525,%4       ;LOAD MULTIPLICAN WITH 52525
011744  070427  000002                  MUL     #2,%4           ;MULTIPLY 52525 * #2
011750  013767  177776  002500          MOV     @#PS,PSW        ;SAVE PS
011756  122767  000001  002472          CMPB    #1,PSW          ;IS PS = 1
011764  001401                          BEQ     .+4
011766  000000                          HLT                     ;PS IS WRONG
011770  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
011774  001401                          BEQ     .+4
011776  000000                          HLT                     ;HIGH ORDER IS WRONG
012000  022705  125252                  CMP     #125252,%411    ;IS LOW ORDER = 125252
012004  001401                          BEQ     .+4
012006  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 156   MUL   2 * #52525 = 0 125252   PS = 1
                                ;*****************************************************************

012010  010701                          SCOPE                   ;TEST OF MULTIPLY
012012  012704  000002                  MOV     #2,%4           ;LOAD MULTIPLICAN WITH 2
012016  070427  052525                  MUL     #52525,%4       ;MULTIPLY 2 * #52525
012022  013767  177776  002426          MOV     @#PS,PSW        ;SAVE PS
012030  122767  000001  002420          CMPB    #1,PSW          ;IS PS = 1
012036  001401                          BEQ     .+4
012040  000000                          HLT                     ;PS IS WRONG
012042  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
012046  001401                          BEQ     .+4
012050  000000                          HLT                     ;HIGH ORDER IS WRONG
012052  022705  125252                  CMP     #125252,%411    ;IS LOW ORDER = 125252
012056  001401                          BEQ     .+4
012060  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 157   MUL   125252 * #40000 = 165252 100000   PS = 11
                                ;*****************************************************************

012062  010701                          SCOPE                   ;TEST OF MULTIPLY
012064  012704  125252                  MOV     #125252,%4      ;LOAD MULTIPLICAN WITH 125252
012070  070427  040000                  MUL     #40000,%4       ;MULTIPLY 125252 * #40000
012074  013767  177776  002354          MOV     @#PS,PSW        ;SAVE PS
012102  122767  000011  002346          CMPB    #11,PSW         ;IS PS = 11
012110  001401                          BEQ     .+4
012112  000000                          HLT                     ;PS IS WRONG
012114  022704  165252                  CMP     #165252,%4      ;IS HIGH ORDER = 165252
012120  001401                          BEQ     .+4
012122  000000                          HLT                     ;HIGH ORDER IS WRONG
012124  022705  100000                  CMP     #100000,%4!1    ;IS LOW ORDER = 100000
012130  001401                          BEQ     .+4
012132  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 160   MUL   40000 * #125252 = 165252 100000   PS = 11
                                ;*****************************************************************

012134  010701                          SCOPE                   ;TEST OF MULTIPLY
012136  012704  040000                  MOV     #40000,%4       ;LOAD MULTIPLICAN WITH 40000
012142  070427  125252                  MUL     #125252,%4      ;MULTIPLY 40000 * #125252
012146  013767  177776  002302          MOV     @#PS,PSW        ;SAVE PS
012154  122767  000011  002274          CMPB    #11,PSW         ;IS PS = 11
012162  001401                          BEQ     .+4
012164  000000                          HLT                     ;PS IS WRONG
012166  022704  165252                  CMP     #165252,%4      ;IS HIGH ORDER = 165252
012172  001401                          BEQ     .+4
012174  000000                          HLT                     ;HIGH ORDER IS WRONG
012176  022705  100000                  CMP     #100000,%4!1    ;IS LOW ORDER = 100000
012202  001401                          BEQ     .+4
012204  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 161   MUL   100000 * #100000 = 40000 0   PS = 1
                                ;*****************************************************************

012206  010701                          SCOPE                   ;TEST OF MULTIPLY
012210  012704  100000                  MOV     #100000,%4      ;LOAD MULTIPLICAN WITH 100000
012214  070427  100000                  MUL     #100000,%4      ;MULTIPLY 100000 * #100000
012220  013767  177776  002230          MOV     @#PS,PSW        ;SAVE PS
012226  122767  000001  002222          CMPB    #1,PSW          ;IS PS = 1
012234  001401                          BEQ     .+4
012236  000000                          HLT                     ;PS IS WRONG
012240  022704  040000                  CMP     #40000,%4       ;IS HIGH ORDER = 40000
012244  001401                          BEQ     .+4
012246  000000                          HLT                     ;HIGH ORDER IS WRONG
012250  022705  000000                  CMP     #0,%4!1         ;IS LOW ORDER = 0
012254  001401                          BEQ     .+4
012256  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 162   MUL   70707 * #70707 = 31221 44261   PS = 1
                                ;*****************************************************************

012260  010701                          SCOPE                   ;TEST OF MULTIPLY
012262  012704  070707                  MOV     #70707,%4       ;LOAD MULTIPLICAN WITH 70707
012266  070427  070707                  MUL     #70707,%4       ;MULTIPLY 70707 * #70707
012272  013767  177776  002156          MOV     @#PS,PSW        ;SAVE PS
012300  122767  000001  002150          CMPB    #1,PSW          ;IS PS = 1
012306  001401                          BEQ     .+4
012310  000000                          HLT                     ;PS IS WRONG
012312  022704  031221                  CMP     #31221,%4       ;IS HIGH ORDER = 31221
012316  001401                          BEQ     .+4
012320  000000                          HLT                     ;HIGH ORDER IS WRONG
012322  022705  044261                  CMP     #44261,%4!1     ;IS LOW ORDER = 44261
012326  001401                          BEQ     .+4
012330  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 163   MUL   107070 * #107070 = 31222 26100   PS = 1
                                ;*****************************************************************

012332  010701                          SCOPE                   ;TEST OF MULTIPLY
012334  012704  107070                  MOV     #107070,%4      ;LOAD MULTIPLICAN WITH 107070
012340  070427  107070                  MUL     #107070,%4      ;MULTIPLY 107070 * #107070
012344  013767  177776  002104          MOV     @#PS,PSW        ;SAVE PS
012352  122767  000001  002076          CMPB    #1,PSW          ;IS PS = 1
012360  001401                          BEQ     .+4
012362  000000                          HLT                     ;PS IS WRONG
012364  022704  031222                  CMP     #31222,%4       ;IS HIGH ORDER = 31222
012370  001401                          BEQ     .+4
012372  000000                          HLT                     ;HIGH ORDER IS WRONG
012374  022705  026100                  CMP     #26100,%4!1     ;IS LOW ORDER = 26100
012400  001401                          BEQ     .+4
012402  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 164   MUL   100000 * #77777 = 140000 100000   PS = 11
                                ;*****************************************************************

012404  010701                          SCOPE                   ;TEST OF MULTIPLY
012406  012704  100000                  MOV     #100000,%4      ;LOAD MULTIPLICAN WITH 100000
012412  070427  077777                  MUL     #77777,%4       ;MULTIPLY 100000 * #77777
012416  013767  177776  002032          MOV     @#PS,PSW        ;SAVE PS
012424  122767  000011  002024          CMPB    #11,PSW         ;IS PS = 11
012432  001401                          BEQ     .+4
012434  000000                          HLT                     ;PS IS WRONG
012436  022704  140000                  CMP     #140000,%4      ;IS HIGH ORDER = 140000
012442  001401                          BEQ     .+4
012444  000000                          HLT                     ;HIGH ORDER IS WRONG
012446  022705  100000                  CMP     #100000,%4!1    ;IS LOW ORDER = 100000
012452  001401                          BEQ     .+4
012454  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 165   MUL   77777 * #100000 = 140000 100000   PS = 11
                                ;*****************************************************************

012456  010701                          SCOPE                   ;TEST OF MULTIPLY
012460  012704  077777                  MOV     #77777,%4       ;LOAD MULTIPLICAN WITH 77777
012464  070427  100000                  MUL     #100000,%4      ;MULTIPLY 77777 * #100000
012470  013767  177776  001760          MOV     @#PS,PSW        ;SAVE PS
012476  122767  000011  001752          CMPB    #11,PSW         ;IS PS = 11
012504  001401                          BEQ     .+4
012506  000000                          HLT                     ;PS IS WRONG
012510  022704  140000                  CMP     #140000,%4      ;IS HIGH ORDER = 140000
012514  001401                          BEQ     .+4
012516  000000                          HLT                     ;HIGH ORDER IS WRONG
012520  022705  100000                  CMP     #100000,%4!1    ;IS LOW ORDER = 100000
012524  001401                          BEQ     .+4
012526  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 166   MUL   157634 * #104031 = 7453 133074   PS = 1
                                ;*****************************************************************

012530  010701                          SCOPE                   ;TEST OF MULTIPLY
012532  012704  157634                  MOV     #157634,%4      ;LOAD MULTIPLICAN WITH 157634
012536  070427  104031                  MUL     #104031,%4      ;MULTIPLY 157634 * #104031
012542  013767  177776  001706          MOV     @#PS,PSW        ;SAVE PS
012550  122767  000001  001700          CMPB    #1,PSW          ;IS PS = 1
012556  001401                          BEQ     .+4
012560  000000                          HLT                     ;PS IS WRONG
012562  022704  007453                  CMP     #7453,%4        ;IS HIGH ORDER = 7453
012566  001401                          BEQ     .+4
012570  000000                          HLT                     ;HIGH ORDER IS WRONG
012572  022705  133074                  CMP     #133074,%4!1    ;IS LOW ORDER = 133074
012576  001401                          BEQ     .+4
012600  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 167   MUL   104031 * #157634 = 7453 133074   PS = 1
                                ;*****************************************************************

012602  010701                          SCOPE                   ;TEST OF MULTIPLY
012604  012704  104031                  MOV     #104031,%4      ;LOAD MULTIPLICAN WITH 104031
012610  070427  157634                  MUL     #157634,%4      ;MULTIPLY 104031 * #157634
012614  013767  177776  001634          MOV     @#PS,PSW        ;SAVE PS
012622  122767  000001  001626          CMPB    #1,PSW          ;IS PS = 1
012630  001401                          BEQ     .+4
012632  000000                          HLT                     ;PS IS WRONG
012634  022704  007453                  CMP     #7453,%4        ;IS HIGH ORDER = 7453
012640  001401                          BEQ     .+4
012642  000000                          HLT                     ;HIGH ORDER IS WRONG
012644  022705  133074                  CMP     #133074,%411    ;IS LOW ORDER = 133074
012650  001401                          BEQ     .+4
012652  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 170   MUL   152210 * #0 = 0 0   PS = 4
                                ;*****************************************************************

012654  010701                          SCOPE                   ;TEST OF MULTIPLY
012656  012704  152210                  MOV     #152210,%4      ;LOAD MULTIPLICAN WITH 152210
012662  070427  000000                  MUL     #0,%4           ;MULTIPLY 152210 * #0
012666  013767  177776  001562          MOV     @#PS,PSW        ;SAVE PS
012674  122767  000004  001554          CMPB    #4,PSW          ;IS PS = 4
012702  001401                          BEQ     .+4
012704  000000                          HLT                     ;PS IS WRONG
012706  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
012712  001401                          BEQ     .+4
012714  000000                          HLT                     ;HIGH ORDER IS WRONG
012716  022705  000000                  CMP     #0,%411         ;IS LOW ORDER = 0
012722  001401                          BEQ     .+4
012724  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 171   MUL   0 * #152210 = 0 0   PS = 4
                                ;*****************************************************************

012726  010701                          SCOPE                   ;TEST OF MULTIPLY
012730  012704  000000                  MOV     #0,%4           ;LOAD MULTIPLICAN WITH 0
012734  070427  152210                  MUL     #152210,%4      ;MULTIPLY 0 * #152210
012740  013767  177776  001510          MOV     @#PS,PSW        ;SAVE PS
012746  122767  000004  001502          CMPB    #4,PSW          ;IS PS = 4
012754  001401                          BEQ     .+4
012756  000000                          HLT                     ;PS IS WRONG
012760  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
012764  001401                          BEQ     .+4
012766  000000                          HLT                     ;HIGH ORDER IS WRONG
012770  022705  000000                  CMP     #0,%411         ;IS LOW ORDER = 0
012774  001401                          BEQ     .+4
012776  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 172   MUL   -1 * #0 = 0 0   PS = 4
                                ;*****************************************************************

013000  010701                          SCOPE                   ;TEST OF MULTIPLY
013002  012704  177777                  MOV     #-1,%4          ;LOAD MULTIPLICAN WITH -1
013006  070427  000000                  MUL     #0,%4           ;MULTIPLY -1 * #0
013012  013767  177776  001436          MOV     @#PS,PSW        ;SAVE PS
013020  122767  000004  001430          CMPB    #4,PSW          ;IS PS = 4
013026  001401                          BEQ     .+4
013030  000000                          HLT                     ;PS IS WRONG
013032  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
013036  001401                          BEQ     .+4
013040  000000                          HLT                     ;HIGH ORDER IS WRONG
013042  022705  000000                  CMP     #0,%411         ;IS LOW ORDER = 0
013046  001401                          BEQ     .+4
013050  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*********************************************************************
                                ;TEST 173   MUL   0 * #-1 = 0 0   PS = 4
                                ;*********************************************************************

013052  010701                          SCOPE                   ;TEST OF MULTIPLY
013054  012704  000000                  MOV     #0,%4           ;LOAD MULTIPLICAN WITH 0
013060  070427  177777                  MUL     #-1,%4          ;MULTIPLY 0 * #-1
013064  013767  177776  001364          MOV     @#PS,PSW        ;SAVE PS
013072  122767  000004  001356          CMPB    #4,PSW          ;IS PS = 4
013100  001401                          BEQ     .+4
013102  000000                          HLT                     ;PS IS WRONG
013104  022704  000000                  CMP     #0,%4           ;IS HIGH ORDER = 0
013110  001401                          BEQ     .+4
013112  000000                          HLT                     ;HIGH ORDER IS WRONG
013114  022705  000000                  CMP     #0,%4+1         ;IS LOW ORDER = 0
013120  001401                          BEQ     .+4
013122  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*********************************************************************
                                ;TEST 174   MUL   -1 * #1 = -1 -1   PS = 10
                                ;*********************************************************************

013124  010701                          SCOPE                   ;TEST OF MULTIPLY
013126  012705  177777                  MOV     #-1,%5          ;LOAD MULTIPLICAN WITH -1
013132  070527  000001                  MUL     #1,%5           ;MULTIPLY -1 * #1
013136  013767  177776  001312          MOV     @#PS,PSW        ;SAVE PS
013144  122767  000010  001304          CMPB    #10,PSW         ;IS PS = 10
013152  001401                          BEQ     .+4
013154  000000                          HLT                     ;PS IS WRONG
013156  022705  177777                  CMP     #-1,%5          ;IS HIGH ORDER = -1
013162  001401                          BEQ     .+4
013164  000000                          HLT                     ;HIGH ORDER IS WRONG
013166  022705  177777                  CMP     #-1,%5+1        ;IS LOW ORDER = -1
013172  001401                          BEQ     .+4
013174  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*********************************************************************
                                ;TEST 175   MUL   -1 * #0 = 0 0   PS = 4
                                ;*********************************************************************

013176  010701                          SCOPE                   ;TEST OF MULTIPLY
013200  012705  177777                  MOV     #-1,%5          ;LOAD MULTIPLICAN WITH -1
013204  070527  000000                  MUL     #0,%5           ;MULTIPLY -1 * #0
013210  013767  177776  001240          MOV     @#PS,PSW        ;SAVE PS
013216  122767  000004  001232          CMPB    #4,PSW          ;IS PS = 4
013224  001401                          BEQ     .+4
013226  000000                          HLT                     ;PS IS WRONG
013230  022705  000000                  CMP     #0,%5           ;IS HIGH ORDER = 0
013234  001401                          BEQ     .+4
013236  000000                          HLT                     ;HIGH ORDER IS WRONG
013240  022705  000000                  CMP     #0,%5+1         ;IS LOW ORDER = 0
013244  001401                          BEQ     .+4
013246  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*********************************************************************
                                ;TEST 176   MUL   77777 * #100000 = 100000 100000   PS = 11
                                ;*********************************************************************

013250  010701                          SCOPE                   ;TEST OF MULTIPLY
013252  012705  077777                  MOV     #77777,%5       ;LOAD MULTIPLICAN WITH 77777
013256  070527  100000                  MUL     #100000,%5      ;MULTIPLY 77777 * #100000
013262  013767  177776  001166          MOV     @#PS,PSW        ;SAVE PS
013270  122767  000011  001160          CMPB    #11,PSW         ;IS PS = 11
013276  001401                          BEQ     .+4
013300  000000                          HLT                     ;PS IS WRONG
013302  022705  100000                  CMP     #100000,%5      ;IS HIGH ORDER = 100000
013306  001401                          BEQ     .+4
013310  000000                          HLT                     ;HIGH ORDER IS WRONG
013312  022705  100000                  CMP     #100000,%5+1    ;IS LOW ORDER = 100000
013316  001401                          BEQ     .+4
013320  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 177   MUL   -1 * #77777 = 100001 100001   PS = 10
                                ;*****************************************************************

013322  010701                          SCOPE                   ;TEST OF MULTIPLY
013324  012705  177777                  MOV     #-1,%5          ;LOAD MULTIPLICAN WITH -1
013330  070527  077777                  MUL     #77777,%5       ;MULTIPLY -1 * #77777
013334  013767  177776  001114          MOV     @#PS,PSW        ;SAVE PS
013342  122767  000010  001106          CMPB    #10,PSW         ;IS PS = 10
013350  001401                          BEQ     .+4
013352  000000                          HLT                     ;PS IS WRONG
013354  022705  100001                  CMP     #100001,%5      ;IS HIGH ORDER = 100001
013360  001401                          BEQ     .+4
013362  000000                          HLT                     ;HIGH ORDER IS WRONG
013364  022705  100001                  CMP     #100001,%5!1    ;IS LOW ORDER = 100001
013370  001401                          BEQ     .+4
013372  000000                          HLT                     ;LOW ORDER IS WRONG


                                ;*****************************************************************
                                ;TEST 200   MUL   77777 * #77777 = 1 1   PS = 1
                                ;*****************************************************************

013374  010701                          SCOPE                   ;TEST OF MULTIPLY
013376  012705  077777                  MOV     #77777,%5       ;LOAD MULTIPLICAN WITH 77777
013402  070527  077777                  MUL     #77777,%5       ;MULTIPLY 77777 * #77777
013406  013767  177776  001042          MOV     @#PS,PSW        ;SAVE PS
013414  122767  000001  001034          CMPB    #1,PSW          ;IS PS = 1
013422  001401                          BEQ     .+4
013424  000000                          HLT                     ;PS IS WRONG
013426  022705  000001                  CMP     #1,%5           ;IS HIGH ORDER = 1
013432  001401                          BEQ     .+4
013434  000000                          HLT                     ;HIGH ORDER IS WRONG
013436  022705  000001                  CMP     #1,%5!1         ;IS LOW ORDER = 1
013442  001401                          BEQ     .+4
013444  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 201   MUL   2 * #2 = 4 4   PS = 0
                                ;*****************************************************************

013446  010701                          SCOPE                   ;TEST OF MULTIPLY
013450  012705  000002                  MOV     #2,%5           ;LOAD MULTIPLICAN WITH 2
013454  070527  000002                  MUL     #2,%5           ;MULTIPLY 2 * #2
013460  013767  177776  000770          MOV     @#PS,PSW        ;SAVE PS
013466  122767  000000  000762          CMPB    #0,PSW          ;IS PS = 0
013474  001401                          BEQ     .+4
013476  000000                          HLT                     ;PS IS WRONG
013500  022705  000004                  CMP     #4,%5           ;IS HIGH ORDER = 4
013504  001401                          BEQ     .+4
013506  000000                          HLT                     ;HIGH ORDER IS WRONG
013510  022705  000004                  CMP     #4,%5!1         ;IS LOW ORDER = 4
013514  001401                          BEQ     .+4
013516  000000                          HLT                     ;LOW ORDER IS WRONG


013520  012702  040000                  MOV     #40000,%2
013524  012703  014462                  MOV     #S1,%3
013530  012704  014464                  MOV     #S2,%4

                                ;*****************************************************************
                                ;TEST 202   MUL   125252 * S1 = 165252 100000   PS = 11
                                ;*****************************************************************

013534  010701                          SCOPE                   ;TEST OF MULTIPLY
013536  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
013542  070067  000714                  MUL     S1,%0           ;MULTIPLY 125252 * S1
013546  013767  177776  000702          MOV     @#PS,PSW        ;SAVE PS
013554  122767  000011  000674          CMPB    #11,PSW         ;IS PS = 11
013562  001401                          BEQ     .+4
013564  000000                          HLT                     ;PS IS WRONG
013566  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
013572  001401                          BEQ     .+4
013574  000000                          HLT                     ;HIGH ORDER IS WRONG
013576  022701  100000                  CMP     #100000,%0!1    ;IS LOW ORDER = 100000
013602  001401                          BEQ     .+4
013604  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 203   MUL   125252 * 052 = 165252 100000   PS = 11
                                ;*****************************************************************

013606  010701                          SCOPE                   ;TEST OF MULTIPLY
013610  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
013614  070077  000644                  MUL     @52,%0          ;MULTIPLY 125252 * 052
013620  013767  177776  000630          MOV     @@PS,PSW        ;SAVE PS
013626  122767  000011  000622          CMPB    #11,PSW         ;IS PS = 11
013634  001401                          BEQ     .+4
013636  000000                          HLT                     ;PS IS WRONG
013640  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
013644  001401                          BEQ     .+4
013646  000000                          HLT                     ;HIGH ORDER IS WRONG
013650  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
013654  001401                          BEQ     .+4
013656  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 204   MUL   125252 * @@S1 = 165252 100000   PS = 11
                                ;*****************************************************************

013660  010701                          SCOPE                   ;TEST OF MULTIPLY
013662  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
013666  070037  014462                  MUL     @@S1,%0         ;MULTIPLY 125252 * @@S1
013672  013767  177776  000556          MOV     @@PS,PSW        ;SAVE PS
013700  122767  000011  000550          CMPB    #11,PSW         ;IS PS = 11
013706  001401                          BEQ     .+4
013710  000000                          HLT                     ;PS IS WRONG
013712  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
013716  001401                          BEQ     .+4
013720  000000                          HLT                     ;HIGH ORDER IS WRONG
013722  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
013726  001401                          BEQ     .+4
013730  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*****************************************************************
                                ;TEST 205   MUL   125252 * %2 = 165252 100000   PS = 11
                                ;*****************************************************************

013732  010701                          SCOPE                   ;TEST OF MULTIPLY
013734  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
013740  070002                          MUL     %2,%0           ;MULTIPLY 125252 * %2
013742  013767  177776  000506          MOV     @@PS,PSW        ;SAVE PS
013750  122767  000011  000500          CMPB    #11,PSW         ;IS PS = 11
013756  001401                          BEQ     .+4
013760  000000                          HLT                     ;PS IS WRONG
013762  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
013766  001401                          BEQ     .+4
013770  000000                          HLT                     ;HIGH ORDER IS WRONG
013772  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
013776  001401                          BEQ     .+4
014000  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*****************************************************************
                                ;TEST 206   MUL   125252 * (3)+ = 165252 100000   PS = 11
                                ;*****************************************************************

014002  010701                          SCOPE                   ;TEST OF MULTIPLY
014004  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
014010  070023                          MUL     (3)+,%0         ;MULTIPLY 125252 * (3)+
014012  013767  177776  000436          MOV     @@PS,PSW        ;SAVE PS
014020  122767  000011  000430          CMPB    #11,PSW         ;IS PS = 11
014026  001401                          BEQ     .+4
014030  000000                          HLT                     ;PS IS WRONG
014032  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
014036  001401                          BEQ     .+4
014040  000000                          HLT                     ;HIGH ORDER IS WRONG
014042  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
014046  001401                          BEQ     .+4
014050  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*********************************************************************
                                ;TEST 207   MUL   125252 * -(3) = 165252 100000   PS = 11
                                ;*********************************************************************

014052  010701                          SCOPE                   ;TEST OF MULTIPLY
014054  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
014060  070043                          MUL     -(3),%0         ;MULTIPLY 125252 * -(3)
014062  013767  177776  000366          MOV     @#PS,PSW        ;SAVE PS
014070  122767  000011  000360          CMPB    #11,PSW         ;IS PS = 11
014076  001401                          BEQ     .+4
014100  000000                          HLT                     ;PS IS WRONG
014102  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
014106  001401                          BEQ     .+4
014110  000000                          HLT                     ;HIGH ORDER IS WRONG
014112  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
014116  001401                          BEQ     .+4
014120  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*********************************************************************
                                ;TEST 210   MUL   125252 * 2(4) = 165252 100000   PS = 11
                                ;*********************************************************************

014122  010701                          SCOPE                   ;TEST OF MULTIPLY
014124  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
014130  070064  000002                  MUL     2(4),%0         ;MULTIPLY 125252 * 2(4)
014134  013767  177776  000314          MOV     @#PS,PSW        ;SAVE PS
014142  122767  000011  000306          CMPB    #11,PSW         ;IS PS = 11
014150  001401                          BEQ     .+4
014152  000000                          HLT                     ;PS IS WRONG
014154  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
014160  001401                          BEQ     .+4
014162  000000                          HLT                     ;HIGH ORDER IS WRONG
014164  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
014170  001401                          BEQ     .+4
014172  000000                          HLT                     ;LOW ORDER IS WRONG
```



```
                                ;*********************************************************************
                                ;TEST 211   MUL   125252 * @(4) = 165252 100000   PS = 11
                                ;*********************************************************************

014174  010701                          SCOPE                   ;TEST OF MULTIPLY
014176  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
014202  070074  000000                  MUL     @(4),%0         ;MULTIPLY 125252 * @(4)
014206  013767  177776  000242          MOV     @#PS,PSW        ;SAVE PS
014214  122767  000011  000234          CMPB    #11,PSW         ;IS PS = 11
014222  001401                          BEQ     .+4
014224  000000                          HLT                     ;PS IS WRONG
014226  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
014232  001401                          BEQ     .+4
014234  000000                          HLT                     ;HIGH ORDER IS WRONG
014236  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
014242  001401                          BEQ     .+4
014244  000000                          HLT                     ;LOW ORDER IS WRONG

                                ;*********************************************************************
                                ;TEST 212   MUL   125252 * @(4)+ = 165252 100000   PS = 11
                                ;*********************************************************************

014246  010701                          SCOPE                   ;TEST OF MULTIPLY
014250  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
014254  070034                          MUL     @(4)+,%0        ;MULTIPLY 125252 * @(4)+
014256  013767  177776  000172          MOV     @#PS,PSW        ;SAVE PS
014264  122767  000011  000164          CMPB    #11,PSW         ;IS PS = 11
014272  001401                          BEQ     .+4
014274  000000                          HLT                     ;PS IS WRONG
014276  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
014302  001401                          BEQ     .+4
014304  000000                          HLT                     ;HIGH ORDER IS WRONG
014306  022701  100000                  CMP     #100000,%011    ;IS LOW ORDER = 100000
014312  001401                          BEQ     .+4
014314  000000                          HLT                     ;LOW ORDER IS WRONG
```

```
                                ;*****************************************************************
                                ;TEST 213   MUL   125252 * 0-(4) = 165252 100000   PS = 11
                                ;*****************************************************************

014316  010701                          SCOPE                   ;TEST OF MULTIPLY
014320  012700  125252                  MOV     #125252,%0      ;LOAD MULTIPLICAN WITH 125252
014324  070054                          MUL     0-(4),%0        ;MULTIPLY 125252 * 0-(4)
014326  013767  177776  000122          MOV     @#PS,PSW        ;SAVE PS
014334  122767  000011  000114          CMPB    #11,PSW         ;IS PS = 11
014342  001401                          BEQ     .+4
014344  000000                          HLT                     ;PS IS WRONG
014346  022700  165252                  CMP     #165252,%0      ;IS HIGH ORDER = 165252
014352  001401                          BEQ     .+4
014354  000000                          HLT                     ;HIGH ORDER IS WRONG
014356  022701  100000                  CMP     #100000,%1      ;IS LOW ORDER = 100000
014362  001401                          BEQ     .+4
014364  000000                          HLT                     ;LOW ORDER IS WRONG


014366  005267  164406                  INC     ICNT
014372  016737  164402  177570          MOV     ICNT,@#DISPLAY
014400  022767  020000  164372          CMP     #20000,ICNT
014406  001402                          BEQ     .+6
014410  000167  164366                  JMP     BEG
014414  005067  164360                  CLR     ICNT
014420  105737  177564                  TSTB    @#177564
014424  100375                          BPL     .-4
014426  112737  000007  177566          MOVB    #7,@#177566
014434  013700  000042                  MOV     @#42,%0         ;GET MONITOR RETURN ADDRESS
014440  001404                          BEQ     $1              ;SKIP IF NONE
014442  004710                          JSR     7,(0)           ;GO BACK TO THE MONITOR
014444  000240                          NOP
014446  000240                          NOP
014450  000240                          NOP
014452  000137  000200          $1:     JMP     @#200           ;RESTART THE PROGRAM

014456  000000                  PSW:    0
014460  177777                  S0:     -1
014462  040000                  S1:     40000
014464  014462                  S2:     S1
014466  040000                  S3:     40000

        000001                  .END
```



```
BEG      001002         DISPLA = 177570         HLT    = 000000         ICNT     001000
M      = 000006         N      = 000214         PC     =%000007         PS     = 177776
PSW      014456         SCOPE  = 010701         SP     =%000006         SWR    = 177570
S0       014460         S1       014462         S2       014464         S3       014466
$1       014452         .      = 014470


 ERRORS DETECTED:  0
```