

# PDP11/45

DIVIDE  
MD-11-DCKBL-A

EP DCKBL A DL A

OCT 1976

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**digital**

FICHE 1 OF 3

Made in U.S.A.

0000	0001	0002	0003	0004
0005	0006	0007	0008	0009
0010	0011	0012	0013	0014
0015	0016	0017	0018	0019
0020	0021	0022	0023	0024
0025	0026	0027	0028	0029
0030	0031	0032	0033	0034
0035	0036	0037	0038	0039
0040	0041	0042	0043	0044
0045	0046	0047	0048	0049
0050	0051	0052	0053	0054
0055	0056	0057	0058	0059
0060	0061	0062	0063	0064
0065	0066	0067	0068	0069
0070	0071	0072	0073	0074
0075	0076	0077	0078	0079
0080	0081	0082	0083	0084
0085	0086	0087	0088	0089
0090	0091	0092	0093	0094
0095	0096	0097	0098	0099

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.REM x

IDENTIFICATION

PRODUCT CODE:	MAINDEC-11-DCKBL-A1-D
PRODUCT NAME:	DIV INSTRUCTION TEST
DATE CREATED:	15 MAR 1972
MAINTAINER:	DIAGNOSTIC GROUP
AUTHOR:	BOB BRAIN

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MAYNARD, MASS

MAINDEC-11-DCKBL-A DIV TEST MACY11 27(732) 03-SEP-76 18:01 PAGE 1  
DCKBLA.P11

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- 1.0 ABSTRACT  
THIS PROGRAM WILL INCREMENTLY TEST AND ISOLATE SIMPLE MALFUNCTION RELATED TO THE DIV INSTRUCTION
- 2.0 REQUIREMENTS
  - 2.1 EQUIPMENT  
BASIC 11/45 SYSTEM OR  
11/40 WITH KELL-E OPTION
  - 2.2 STORAGE  
THIS PROGRAM USES 0 THRU 17500
  - 2.3 PRELIMINARY PROGRAMS  
DOMA 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 PROCEED 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 CONTINUOUSLY 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

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

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 DESCRIPTION  
THIS IS A TEST OF THE DIV INSTRUCTION. IT TESTS DIV ON DIFFERENT NUMBER PATERNS IN ALL EVEN REGISTERS. ERROR CONDITIONS ARE ALSO CHECKED

.TITLE MAINDEC-11-DCKBL-A DIV TEST  
;COPYRIGHT 1972, DIGITAL EQUIPMENT CORP., MAYNARD, MASS  
;PROGRAM BY BOB BRAIN

.ENABL ABS

.=0 ;TRAP CATCHER 0 - 776

000000

000000  
010701  
000006  
000007  
177570  
177570  
177776  
000000  
000001  
000000

HLT=HALT  
SCOPE=10701  
SP=%6  
PC=%7  
SMR=177570  
DISPLAY=SMR  
PS=177776  
DUMMY=0  
N=1  
M=0

000200 000200 000576  
000167

001000 000000

.=200 JMP BEG

= 1000 ;PASS COUNT  
ICNT: 0

001002 012706 000500  
001006 005037 177776  
001012 032737 001000 177570  
001020 001403  
001022 012737 004000 177776  
001030 032767 000400 176532  
001036 001403  
001040 116767 176524 176722

BEG: MOV #500,%6 ;## STACK AT 500 ##  
CLR 2#PS ;WHICH REGISTER SET?  
BIT #1000,2#SMR  
BEQ .+10  
MOV #4000,2#PS ;ALTERNATE!  
BIT #400,SMR  
BEQ .+10  
NOVB SMR,177770

MAINDEC-11-DCKBL-A DIV TEST  
DCKBLA.P11

MACY11 27(732) 03-SEP-76 18:01

**EO1**  
PAGE 4

\*\*\*\*\*  
:TEST 1 DIV 0 4 / 82 = 2 REM = 0 PS = 0  
:\*\*\*\*\*

Address	Instruction	Hex	Label	Scope	Comment
001046	010701			SCOPE	;TEST OF DIVIDE
001050	012700	000000		MOV 80,x0	;LOAD HIGH ORDER WITH 0
001054	012701	000004		MOV 84,x0+1	;LOAD LOW ORDER WITH 4
001060	071027	000002		DIV 82,x0	;DIVIDE BY 82
001064	013767	177776	010530	MOV 28PS,PSW	;SAVE PS
001072	122767	000000	010522	CMPB 80,PSW	;IS PS = 0
001100	001401			BEQ .+4	
001102	000000			HLT	;PS IS WRONG
001104	022700	000002		CMP 82,x0	;IS QUOTIENT = 2
001110	001401			BEQ .+4	
001112	000000			HLT	;QUOTIENT IS WRONG
001114	022701	000000		CMP 80,x0+1	;IS REMAINDER = 0
001120	001401			BEQ .+4	
001122	000000			HLT	;REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 2 DIV 0 9. / 83 = 3 REM = 0 PS = 0  
:\*\*\*\*\*

Address	Instruction	Hex	Label	Scope	Comment
001124	010701			SCOPE	;TEST OF DIVIDE
001126	012700	000000		MOV 80,x0	;LOAD HIGH ORDER WITH 0
001132	012701	000011		MOV 89,x0+1	;LOAD LOW ORDER WITH 9.
001136	071027	000003		DIV 83,x0	;DIVIDE BY 83
001142	013767	177776	010552	MOV 28PS,PSW	;SAVE PS
001150	122767	000000	010444	CMPB 80,PSW	;IS PS = 0
001156	001401			BEQ .+4	
001160	000000			HLT	;PS IS WRONG
001162	022700	000003		CMP 83,x0	;IS QUOTIENT = 3
001166	001401			BEQ .+4	
001170	000000			HLT	;QUOTIENT IS WRONG
001172	022701	000000		CMP 80,x0+1	;IS REMAINDER = 0
001176	001401			BEQ .+4	
001200	000000			HLT	;REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 3 DIV -1 -4 / #2 = -2 REM = 0 PS = 10  
: \*\*\*\*\*

001202	010701			SCOPE		: TEST OF DIVIDE
001204	012700	177777		MOV	#-1,%0	: LOAD HIGH ORDER WITH -1
001210	012701	177774		MOV	#-4,%0+1	: LOAD LOW ORDER WITH -4
001214	071027	000002		DIV	#2,%0	: DIVIDE BY #2
001220	013767	177776	010374	MOV	2#PS,PSW	: SAVE PS
001226	122767	000010	010366	CMPB	#10,PSW	: IS PS = 10
001234	001401			BEQ	+.4	: PS IS WRONG
001236	000000			HLT		
001240	022700	177776		CMP	#-2,%0	: IS QUOTIENT = -2
001244	001401			BEQ	+.4	: QUOTIENT IS WRONG
001246	000000			HLT		
001250	022701	000000		CMP	#0,%0+1	: IS REMAINDER = 0
001254	001401			BEQ	+.4	: REMAINDER IS WRONG
001256	000000			HLT		

\*\*\*\*\*  
: TEST 4 DIV -1 -9. / #3 = -3 REM = 0 PS = 10  
: \*\*\*\*\*

001260	010701			SCOPE		: TEST OF DIVIDE
001262	012700	177777		MOV	#-1,%0	: LOAD HIGH ORDER WITH -1
001266	012701	177767		MOV	#-9,%0+1	: LOAD LOW ORDER WITH -9.
001272	071027	000003		DIV	#3,%0	: DIVIDE BY #3
001276	013767	177776	010316	MOV	2#PS,PSW	: SAVE PS
001304	122767	000010	010310	CMPB	#10,PSW	: IS PS = 10
001312	001401			BEQ	+.4	: PS IS WRONG
001314	000000			HLT		
001316	022700	177775		CMP	#-3,%0	: IS QUOTIENT = -3
001322	001401			BEQ	+.4	: QUOTIENT IS WRONG
001324	000000			HLT		
001326	022701	000000		CMP	#0,%0+1	: IS REMAINDER = 0
001332	001401			BEQ	+.4	: REMAINDER IS WRONG
001334	000000			HLT		

\*\*\*\*\*  
: TEST 5 DIV 0 9. / #2 = 4 REM = 1 PS = 0  
: \*\*\*\*\*

001336	010701			SCOPE		: TEST OF DIVIDE
001340	012700	000000		MOV	#0,%0	: LOAD HIGH ORDER WITH 0
001344	012701	000011		MOV	#9,%0+1	: LOAD LOW ORDER WITH 9.
001350	071027	000002		DIV	#2,%0	: DIVIDE BY #2
001354	013767	177776	010240	MOV	3#PS,PSW	: SAVE PS
001362	122767	000000	010232	CMPB	#0,PSW	: IS PS = 0
001370	001401			BEQ	+.4	
001372	000000			HLT		: PS IS WRONG
001374	022700	000004		CMP	#4,%0	: IS QUOTIENT = 4
001400	001401			BEQ	+.4	
001402	000000			HLT		: QUOTIENT IS WRONG
001404	022701	000001		CMP	#1,%0+1	: IS REMAINDER = 1
001410	001401			BEQ	+.4	
001412	000000			HLT		: REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 6 DIV -1 -9. / #2 = -4 REM = -1 PS = 10  
: \*\*\*\*\*

001414	010701			SCOPE		: TEST OF DIVIDE
001416	012700	177777		MOV	#-1,%0	: LOAD HIGH ORDER WITH -1
001422	012701	177767		MOV	#-9,%0+1	: LOAD LOW ORDER WITH -9.
001426	071027	000002		DIV	#2,%0	: DIVIDE BY #2
001432	013767	177776	010162	MOV	3#PS,PSW	: SAVE PS
001440	122767	000010	010154	CMPB	#10,PSW	: IS PS = 10
001446	001401			BEQ	+.4	
001450	000000			HLT		: PS IS WRONG
001452	022700	177774		CMP	#-4,%0	: IS QUOTIENT = -4
001456	001401			BEQ	+.4	
001460	000000			HLT		: QUOTIENT IS WRONG
001462	022701	177777		CMP	#-1,%0+1	: IS REMAINDER = -1
001466	001401			BEQ	+.4	
001470	000000			HLT		: REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 7 DIV 0 9. / 8-2 = -4 REM = 1 PS = 10  
\*\*\*\*\*

001472	010701			SCOPE		:TEST OF DIVIDE
001474	012700	000000		MOV	#0,%0	:LOAD HIGH ORDER WITH 0
001500	012701	000011		MOV	#9,%0+1	:LOAD LOW ORDER WITH 9.
001504	071027	177776		DIV	8-2,%0	:DIVIDE BY 8-2
001510	013767	177776	010104	MOV	2#PS,PSW	:SAVE PS
001516	122767	000010	010076	CMPB	#10,PSW	:IS PS = 10
001524	001401			BEQ	+.4	:PS IS WRONG
001526	000000			HLT		
001530	022700	177774		CMP	8-4,%0	:IS QUOTIENT = -4
001534	001401			BEQ	+.4	:QUOTIENT IS WRONG
001536	000000			HLT		
001540	022701	000001		CMP	#1,%0+1	:IS REMAINDER = 1
001544	001401			BEQ	+.4	:REMAINDER IS WRONG
001546	000000			HLT		

\*\*\*\*\*  
:TEST 10 DIV 0 2 / #3 = 0 REM = 2 PS = 4  
\*\*\*\*\*

001550	010701			SCOPE		:TEST OF DIVIDE
001552	012700	000000		MOV	#0,%0	:LOAD HIGH ORDER WITH 0
001556	012701	000002		MOV	#2,%0+1	:LOAD LOW ORDER WITH 2
001562	071027	000003		DIV	#3,%0	:DIVIDE BY #3
001566	013767	177776	010026	MOV	2#PS,PSW	:SAVE PS
001574	122767	000004	010020	CMPB	#4,PSW	:IS PS = 4
001602	001401			BEQ	+.4	:PS IS WRONG
001604	000000			HLT		
001606	022700	000000		CMP	#0,%0	:IS QUOTIENT = 0
001612	001401			BEQ	+.4	:QUOTIENT IS WRONG
001614	000000			HLT		
001616	022701	000002		CMP	#2,%0+1	:IS REMAINDER = 2
001622	001401			BEQ	+.4	:REMAINDER IS WRONG
001624	000000			HLT		

\*\*\*\*\*  
;TEST 11 DIV 0 2 / 8-3 = 0 REM = 2 PS = 4  
\*\*\*\*\*

001626	010701			SCOPE		;TEST OF DIVIDE
001630	012700	000000		MOV	80,%0	;LOAD HIGH ORDER WITH 0
001634	012701	000002		MOV	82,%0+1	;LOAD LOW ORDER WITH 2
001640	071027	177775		DIV	8-3,%0	;DIVIDE BY 8-3
001644	013767	177776	007750	MOV	28PS,PSW	;SAVE PS
001652	122767	000004	007742	CMPB	84,PSW	;IS PS = 4
001660	001401			BEQ	+.4	;PS IS WRONG
001662	000000			HLT		
001664	022700	000000		CMP	80,%0	;IS QUOTIENT = 0
001670	001401			BEQ	+.4	;QUOTIENT IS WRONG
001672	000000			HLT		
001674	022701	000002		CMP	82,%0+1	;IS REMAINDER = 2
001700	001401			BEQ	+.4	;REMAINDER IS WRONG
001702	000000			HLT		

\*\*\*\*\*  
;TEST 12 DIV -1 -2 / 83 = 0 REM = -2 PS = 4  
\*\*\*\*\*

001704	010701			SCOPE		;TEST OF DIVIDE
001706	012700	177777		MOV	8-1,%0	;LOAD HIGH ORDER WITH -1
001712	012701	177776		MOV	8-2,%0+1	;LOAD LOW ORDER WITH -2
001716	071027	000003		DIV	83,%0	;DIVIDE BY 83
001722	013767	177776	007672	MOV	28PS,PSW	;SAVE PS
001730	122767	000004	007664	CMPB	84,PSW	;IS PS = 4
001736	001401			BEQ	+.4	;PS IS WRONG
001740	000000			HLT		
001742	022700	000000		CMP	80,%0	;IS QUOTIENT = 0
001746	001401			BEQ	+.4	;QUOTIENT IS WRONG
001750	000000			HLT		
001752	022701	177776		CMP	8-2,%0+1	;IS REMAINDER = -2
001756	001401			BEQ	+.4	;REMAINDER IS WRONG
001760	000000			HLT		

\*\*\*\*\*  
:TEST 13 DIV -1 -1 / #1 = -1 REM = 0 PS = 10  
:\*\*\*\*\*

001762	010701			SCOPE		:TEST OF DIVIDE
001764	012700	177777		MOV	#-1,%0	:LOAD HIGH ORDER WITH -1
001770	012701	177777		MOV	#-1,%0+1	:LOAD LOW ORDER WITH -1
001774	071027	000001		DIV	#1,%0	:DIVIDE BY #1
002000	013767	177776	007614	MOV	2#PS,PSW	:SAVE PS
002006	122767	000010	007606	CMPB	#10,PSW	:IS PS = 10
002014	001401			BEG	+.4	
002016	000000			HLT		:PS IS WRONG
002020	022700	177777		CMP	#-1,%0	:IS QUOTIENT = -1
002024	001401			BEG	+.4	
002026	000000			HLT		:QUOTIENT IS WRONG
002030	022701	000000		CMP	#0,%0+1	:IS REMAINDER = 0
002034	001401			BEG	+.4	
002036	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 14 DIV 0 0 / #1 = 0 REM = 0 PS = 4  
:\*\*\*\*\*

002040	010701			SCOPE		:TEST OF DIVIDE
002042	012700	000000		MOV	#0,%0	:LOAD HIGH ORDER WITH 0
002046	012701	000000		MOV	#0,%0+1	:LOAD LOW ORDER WITH 0
002052	071027	000001		DIV	#1,%0	:DIVIDE BY #1
002056	013767	177776	007536	MOV	2#PS,PSW	:SAVE PS
002064	122767	000004	007530	CMPB	#4,PSW	:IS PS = 4
002072	001401			BEG	+.4	
002074	000000			HLT		:PS IS WRONG
002076	022700	000000		CMP	#0,%0	:IS QUOTIENT = 0
002102	001401			BEG	+.4	
002104	000000			HLT		:QUOTIENT IS WRONG
002106	022701	000000		CMP	#0,%0+1	:IS REMAINDER = 0
002112	001401			BEG	+.4	
002114	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 15 DIV -1 125252 / #2 = 152525 REM = 0 PS = 10  
:\*\*\*\*\*

002116	010701			SCOPE		:TEST OF DIVIDE
002120	012700	177777		MOV	#-1,%0	:LOAD HIGH ORDER WITH -1
002124	012701	125252		MOV	#125252,%0+1	:LOAD LOW ORDER WITH 125252
002130	071027	000002		DIV	#2,%0	:DIVIDE BY #2
002134	013767	177776	007460	MOV	#PS,PSW	:SAVE PS
002142	122767	000010	007452	CMPB	#10,PSW	:IS PS = 10
002150	001401			BEQ	+.4	:PS IS WRONG
002152	000000			HLT		
002154	022700	152525		CMP	#152525,%0	:IS QUOTIENT = 152525
002160	001401			BEQ	+.4	:QUOTIENT IS WRONG
002162	000000			HLT		
002164	022701	000000		CMP	#0,%0+1	:IS REMAINDER = 0
002170	001401			BEQ	+.4	:REMAINDER IS WRONG
002172	000000			HLT		

\*\*\*\*\*  
:TEST 16 DIV 0 52525 / #2 = 25252 REM = 1 PS = 0  
:\*\*\*\*\*

002174	010701			SCOPE		:TEST OF DIVIDE
002176	012700	000000		MOV	#0,%0	:LOAD HIGH ORDER WITH 0
002202	012701	052525		MOV	#52525,%0+1	:LOAD LOW ORDER WITH 52525
002206	071027	000002		DIV	#2,%0	:DIVIDE BY #2
002212	013767	177776	007402	MOV	#PS,PSW	:SAVE PS
002220	122767	000000	007374	CMPB	#0,PSW	:IS PS = 0
002226	001401			BEQ	+.4	:PS IS WRONG
002230	000000			HLT		
002232	022700	025252		CMP	#25252,%0	:IS QUOTIENT = 25252
002236	001401			BEQ	+.4	:QUOTIENT IS WRONG
002240	000000			HLT		
002242	022701	000001		CMP	#1,%0+1	:IS REMAINDER = 1
002246	001401			BEQ	+.4	:REMAINDER IS WRONG
002250	000000			HLT		

\*\*\*\*\*  
:TEST 17 DIV -1 -1 / #-1 = 1 REM = 0 PS = 0  
:\*\*\*\*\*

002252	010701			SCOPE		:TEST OF DIVIDE
002254	012700	177777		MOV	#-1,%0	:LOAD HIGH ORDER WITH -1
002260	012701	177777		MOV	#-1,%0+1	:LOAD LOW ORDER WITH -1
002264	071027	177777		DIV	#-1,%0	:DIVIDE BY #-1
002270	013767	177776	007324	MOV	@#PS,PSW	:SAVE PS
002276	122767	000000	007316	CMPB	#0,PSW	:IS PS = 0
002304	001401			BEQ	+.4	:PS IS WRONG
002306	000000			HLT		
002310	022700	000001		CMP	#1,%0	:IS QUOTIENT = 1
002314	001401			BEQ	+.4	:QUOTIENT IS WRONG
002316	000000			HLT		
002320	022701	000000		CMP	#0,%0+1	:IS REMAINDER = 0
002324	001401			BEQ	+.4	:REMAINDER IS WRONG
002326	000000			HLT		

\*\*\*\*\*  
:TEST 20 DIV 25253 0 / #125252 = 100000 REM = 0 PS = 10  
:\*\*\*\*\*

002330	010701			SCOPE		:TEST OF DIVIDE
002332	012700	025253		MOV	#25253,%0	:LOAD HIGH ORDER WITH 25253
002336	012701	000000		MOV	#0,%0+1	:LOAD LOW ORDER WITH 0
002342	071027	125252		DIV	#125252,%0	:DIVIDE BY #125252
002346	013767	177776	007246	MOV	@#PS,PSW	:SAVE PS
002354	122767	000010	007240	CMPB	#10,PSW	:IS PS = 10
002362	001401			BEQ	+.4	:PS IS WRONG
002364	000000			HLT		
002366	022700	100000		CMP	#100000,%0	:IS QUOTIENT = 100000
002372	001401			BEQ	+.4	:QUOTIENT IS WRONG
002374	000000			HLT		
002376	022701	000000		CMP	#0,%0+1	:IS REMAINDER = 0
002402	001401			BEQ	+.4	:REMAINDER IS WRONG
002404	000000			HLT		

\*\*\*\*\*  
:TEST 21 DIV 25253 1 / #125252 = 100000 REM = 1 PS = 10  
\*\*\*\*\*

002406	010701			SCOPE					
002410	012700	025253		MOV	#25253,%0				;TEST OF DIVIDE
002414	012701	000001		MOV	#1,%0+1				;LOAD HIGH ORDER WITH 25253
002420	071027	125252		DIV	#125252,%0				;LOAD LOW ORDER WITH 1
002424	013767	177776	007170	MOV	#PS,PSW				;DIVIDE BY #125252
									;SAVE PS
002432	122767	000010	007162	CMPB	#10,PSW				;IS PS = 10
002440	001401			BEQ	+.4				;PS IS WRONG
002442	000000			HLT					
002444	022700	100000		CMP	#100000,%0				;IS QUOTIENT = 100000
002450	001401			BEQ	+.4				;QUOTIENT IS WRONG
002452	000000			HLT					
002454	022701	000001		CMP	#1,%0+1				;IS REMAINDER = 1
002460	001401			BEQ	+.4				;REMAINDER IS WRONG
002462	000000			HLT					

\*\*\*\*\*  
:TEST 22 DIV 37777 77777 / #77777 = 77777 REM = 77776 PS = 0  
\*\*\*\*\*

002464	010701			SCOPE					
002466	012700	037777		MOV	#37777,%0				;TEST OF DIVIDE
002472	012701	777777		MOV	#77777,%0+1				;LOAD HIGH ORDER WITH 37777
002476	071027	077777		DIV	#77777,%0				;LOAD LOW ORDER WITH 77777
002502	013767	177776	007112	MOV	#PS,PSW				;DIVIDE BY #77777
									;SAVE PS
002510	122767	000000	007104	CMPB	#0,PSW				;IS PS = 0
002516	001401			BEQ	+.4				;PS IS WRONG
002520	000000			HLT					
002522	022700	077777		CMP	#77777,%0				;IS QUOTIENT = 77777
002526	001401			BEQ	+.4				;QUOTIENT IS WRONG
002530	000000			HLT					
002532	022701	077776		CMP	#77776,%0+1				;IS REMAINDER = 77776
002536	001401			BEQ	+.4				;REMAINDER IS WRONG
002540	000000			HLT					

\*\*\*\*\*  
:TEST 23 DIV 0 10000 / #2 = 40000 REM = 0 PS = 0  
\*\*\*\*\*

002542	010701			SCOPE					
002544	012700	000000		MOV	#0,%0				:TEST OF DIVIDE
002550	012701	100000		MOV	#100000,%0+1				:LOAD HIGH ORDER WITH 0
002554	071027	000002		DIV	#2,%0				:LOAD LOW ORDER WITH 100000
002560	013767	177776	007034	MOV	#PS,PSW				:DIVIDE BY #2
									:SAVE PS
002566	122767	000000	007026	CMPB	#0,PSW				:IS PS = 0
002574	001401			BEQ	+.4				
002576	000000			HLT					:PS IS WRONG
002600	022700	040000		CMP	#40000,%0				:IS QUOTIENT = 40000
002604	001401			BEQ	+.4				
002606	000000			HLT					:QUOTIENT IS WRONG
002610	022701	000000		CMP	#0,%0+1				:IS REMAINDER = 0
002614	001401			BEQ	+.4				
002616	000000			HLT					:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 24 DIV 0 100001 / #2 = 40000 REM = 1 PS = 0  
\*\*\*\*\*

002620	010701			SCOPE					
002622	012700	000000		MOV	#0,%0				:TEST OF DIVIDE
002626	012701	100001		MOV	#100001,%0+1				:LOAD HIGH ORDER WITH 0
002632	071027	000002		DIV	#2,%0				:LOAD LOW ORDER WITH 100001
002636	013767	177776	006756	MOV	#PS,PSW				:DIVIDE BY #2
									:SAVE PS
002644	122767	000000	006750	CMPB	#0,PSW				:IS PS = 0
002652	001401			BEQ	+.4				
002654	000000			HLT					:PS IS WRONG
002656	022700	040000		CMP	#40000,%0				:IS QUOTIENT = 40000
002662	001401			BEQ	+.4				
002664	000000			HLT					:QUOTIENT IS WRONG
002666	022701	000001		CMP	#1,%0+1				:IS REMAINDER = 1
002672	001401			BEQ	+.4				
002674	000000			HLT					:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 25 DIV 20000 37776 / 877777 = 40000 REM = 7776 PS = 0  
\*\*\*\*\*

002676	010701			SCOPE		:TEST OF DIVIDE
002700	012700	020000		MOV	#20000, X0	:LOAD HIGH ORDER WITH 20000
002704	012701	037776		MOV	#37776, X0+1	:LOAD LOW ORDER WITH 37776
002710	071027	077777		DIV	#77777, X0	:DIVIDE BY #77777
002714	013767	177776	006700	MOV	#PS, PSM	:SAVE PS
002722	122767	000000	006672	CHPB	#0, PSM	:IS PS = 0
002730	001401			BEG	.+4	
002732	000000			HLT		:PS IS WRONG
002734	022700	040000		CHP	#40000, X0	:IS QUOTIENT = 40000
002740	001401			BEG	.+4	
002742	000000			HLT		:QUOTIENT IS WRONG
002744	022701	077776		CHP	#77776, X0+1	:IS REMAINDER = 7776
002750	001401			BEG	.+4	
002752	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 26 DIV 17777 7777 / #177776 = 40000 REM = 17777 PS = 0  
\*\*\*\*\*

002754	010701			SCOPE		:TEST OF DIVIDE
002756	012700	177777		MOV	#177777, X0	:LOAD HIGH ORDER WITH 177777
002762	012701	077777		MOV	#77777, X0+1	:LOAD LOW ORDER WITH 77777
002766	071027	177776		DIV	#177776, X0	:DIVIDE BY #177776
002772	013767	177776	006622	MOV	#PS, PSM	:SAVE PS
003000	122767	000000	006614	CHPB	#0, PSM	:IS PS = 0
003006	001401			BEG	.+4	
003010	000000			HLT		:PS IS WRONG
003012	022700	040000		CHP	#40000, X0	:IS QUOTIENT = 40000
003016	001401			BEG	.+4	
003020	000000			HLT		:QUOTIENT IS WRONG
003022	022701	177777		CHP	#177777, X0+1	:IS REMAINDER = 17777
003026	001401			BEG	.+4	
003030	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 27 DIV 157777 100001 / #100000 = 40000 REM = 100001 PS = 0  
: \*\*\*\*\*

003032	010701			SCOPE		: TEST OF DIVIDE
003034	012700	157777		MOV	#157777, %D	: LOAD HIGH ORDER WITH 157777
003040	012701	100001		MOV	#100001, %D+1	: LOAD LOW ORDER WITH 100001
003044	071027	100000		DIV	#100000, %D	: DIVIDE BY #100000
003050	013767	177776	006544	MOV	2#PS, PSM	: SAVE PS
003056	122767	000000	006536	CMPB	#0, PSM	: IS PS = 0
003064	001401			BEG	.+4	
003066	000000			HLT		: PS IS WRONG
003070	022700	040000		CMP	#40000, %D	: IS QUOTIENT = 40000
003074	001401			BEG	.+4	
003076	000000			HLT		: QUOTIENT IS WRONG
003100	022701	100001		CMP	#100001, %D+1	: IS REMAINDER = 100001
003104	001401			BEG	.+4	
003106	000000			HLT		: REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 30 DIV 0 52525 / #52525 = 1 REM = 0 PS = 0  
: \*\*\*\*\*

003110	010701			SCOPE		: TEST OF DIVIDE
003112	012700	000000		MOV	#0, %D	: LOAD HIGH ORDER WITH 0
003116	012701	052525		MOV	#52525, %D+1	: LOAD LOW ORDER WITH 52525
003122	071027	052525		DIV	#52525, %D	: DIVIDE BY #52525
003126	013767	177776	006466	MOV	2#PS, PSM	: SAVE PS
003134	122767	000000	006460	CMPB	#0, PSM	: IS PS = 0
003142	001401			BEG	.+4	
003144	000000			HLT		: PS IS WRONG
003146	022700	000001		CMP	#1, %D	: IS QUOTIENT = 1
003152	001401			BEG	.+4	
003154	000000			HLT		: QUOTIENT IS WRONG
003156	022701	000000		CMP	#0, %D+1	: IS REMAINDER = 0
003162	001401			BEG	.+4	
003164	000000			HLT		: REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 31 DIV 0 52524 / 52525 = 0 REM = 52524 PS = 4  
: \*\*\*\*\*

003166	010701			SCOPE		: TEST OF DIVIDE
003170	012700	000000		MOV	80,X0	: LOAD HIGH ORDER WITH 0
003174	012701	052524		MOV	852524,X0+1	: LOAD LOW ORDER WITH 52524
003200	071027	052525		DIV	852525,X0	: DIVIDE BY 52525
003204	013767	177776	006410	MOV	28PS,PSM	: SAVE PS
003212	122767	000004	006402	CMPB	84,PSM	: IS PS = 4
003220	001401			BEQ	+.4	
003222	000000			HLT		: PS IS WRONG
003224	022700	000000		CMP	80,X0	: IS QUOTIENT = 0
003230	001401			BEQ	+.4	
003232	000000			HLT		: QUOTIENT IS WRONG
003234	022701	052524		CMP	852524,X0+1	: IS REMAINDER = 52524
003240	001401			BEQ	+.4	
003242	000000			HLT		: REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 32 DIV 0 0 / 125252 = 0 REM = 0 PS = 4  
: \*\*\*\*\*

003244	010701			SCOPE		: TEST OF DIVIDE
003246	012700	000000		MOV	80,X0	: LOAD HIGH ORDER WITH 0
003252	012701	000000		MOV	80,X0+1	: LOAD LOW ORDER WITH 0
003256	071027	125252		DIV	8125252,X0	: DIVIDE BY 125252
003262	013767	177776	006332	MOV	28PS,PSM	: SAVE PS
003270	122767	000004	006324	CMPB	84,PSM	: IS PS = 4
003276	001401			BEQ	+.4	
003300	000000			HLT		: PS IS WRONG
003302	022700	000000		CMP	80,X0	: IS QUOTIENT = 0
003306	001401			BEQ	+.4	
003310	000000			HLT		: QUOTIENT IS WRONG
003312	022701	000000		CMP	80,X0+1	: IS REMAINDER = 0
003316	001401			BEQ	+.4	
003320	000000			HLT		: REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 33 DIV 177614 66560 / #40342 = 177070 REM = 0 PS = 10  
:\*\*\*\*\*

003322	010701			SCOPE		:TEST OF DIVIDE
003324	012700	177614		MOV	#177614,x0	:LOAD HIGH ORDER WITH 177614
003330	012701	066560		MOV	#66560,x0+1	:LOAD LOW ORDER WITH 66560
003334	071027	040342		DIV	#40342,x0	:DIVIDE BY #40342
003340	013767	177776	006254	MOV	#PS,PSW	:SAVE PS
003346	122767	000010	006246	CHPB	#10,PSW	:IS PS = 10
003354	001401			BEG	+.4	
003356	000000			HLT		:PS IS WRONG
003360	022700	177070		CHP	#177070,x0	:IS QUOTIENT = 177070
003364	001401			BEG	+.4	
003366	000000			HLT		:QUOTIENT IS WRONG
003370	022701	000000		CHP	#0,x0+1	:IS REMAINDER = 0
003374	001401			BEG	+.4	
003376	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 34 DIV 0 77777 / #0 = DUMMY REM = DUMMY PS = 3  
:\*\*\*\*\*

003400	010701			SCOPE		:TEST OF DIVIDE
003402	012700	000000		MOV	#0,x0	:LOAD HIGH ORDER WITH 0
003406	012701	077777		MOV	#77777,x0+1	:LOAD LOW ORDER WITH 77777
003412	071027	000000		DIV	#0,x0	:DIVIDE BY #0
003416	013767	177776	006176	MOV	#PS,PSW	:SAVE PS
003424	042767	000014	006170	BIC	#14,PSW	
003432	122767	000003	006162	CHPB	#3,PSW	:IS PS = 3
003440	001401			BEG	+.4	
003442	000000			HLT		:PS IS WRONG

\*\*\*\*\*  
: TEST 35 DIV 77777 177777 / #2 = DUMMY REM = DUMMY PS = 2  
: \*\*\*\*\*

003444	010701			SCOPE		; TEST OF DIVIDE
003446	012700	077777		MOV	#77777, X0	; LOAD HIGH ORDER WITH 77777
003452	012701	177777		MOV	#177777, X0+1	; LOAD LOW ORDER WITH 177777
003456	071027	000002		DIV	#2, X0	; DIVIDE BY #2
003462	013767	177776	006132	MOV	#PS, PSH	; SAVE PS
003470	042767	000014	006124	BIC	#14, PSH	
003476	122767	000002	006116	CMPB	#2, PSH	; IS PS = 2
003504	001401			BEQ	+.4	
003506	000000			HLT		; PS IS WRONG

\*\*\*\*\*  
: TEST 36 DIV 0 4 / #2 = 2 REM = 0 PS = 0  
: \*\*\*\*\*

003510	010701			SCOPE		; TEST OF DIVIDE
003512	012702	000000		MOV	#0, X2	; LOAD HIGH ORDER WITH 0
003516	012703	000004		MOV	#4, X2+1	; LOAD LOW ORDER WITH 4
003522	071227	000002		DIV	#2, X2	; DIVIDE BY #2
003526	013767	177776	006066	MOV	#PS, PSH	; SAVE PS
003534	122767	000000	006060	CMPB	#0, PSH	; IS PS = 0
003542	001401			BEQ	+.4	
003544	000000			HLT		; PS IS WRONG
003546	022702	000002		CMP	#2, X2	; IS QUOTIENT = 2
003552	001401			BEQ	+.4	
003554	000000			HLT		; QUOTIENT IS WRONG
003556	022703	000000		CMP	#0, X2+1	; IS REMAINDER = 0
003562	001401			BEQ	+.4	
003564	000000			HLT		; REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 37 DIV 0 9. / #3 = 3 REM = 0 PS = 0  
\*\*\*\*\*

003566	010701			SCOPE		:TEST OF DIVIDE
003570	012702	000000		MOV	#0,%2	:LOAD HIGH ORDER WITH 0
003574	012703	000011		MOV	#9,%2+1	:LOAD LOW ORDER WITH 9.
003600	071227	000003		DIV	#3,%2	:DIVIDE BY #3
003604	013767	177776	006010	MOV	3#PS,PSW	:SAVE PS
003612	122767	000000	006002	CMPB	#0,PSW	:IS PS = 0
003620	001401			BEQ	+.4	:PS IS WRONG
003622	000000			HLT		
003624	022702	000003		CMP	#3,%2	:IS QUOTIENT = 3
003630	001401			BEQ	+.4	:QUOTIENT IS WRONG
003632	000000			HLT		
003634	022703	000000		CMP	#0,%2+1	:IS REMAINDER = 0
003640	001401			BEQ	+.4	:REMAINDER IS WRONG
003642	000000			HLT		

\*\*\*\*\*  
:TEST 40 DIV -1 -4 / #2 = -2 REM = 0 PS = 10  
\*\*\*\*\*

003644	010701			SCOPE		:TEST OF DIVIDE
003646	012702	177777		MOV	#-1,%2	:LOAD HIGH ORDER WITH -1
003652	012703	177774		MOV	#-4,%2+1	:LOAD LOW ORDER WITH -4
003656	071227	000002		DIV	#2,%2	:DIVIDE BY #2
003662	013767	177776	005732	MOV	3#PS,PSW	:SAVE PS
003670	122767	000010	005724	CMPB	#10,PSW	:IS PS = 10
003676	001401			BEQ	+.4	:PS IS WRONG
003700	000000			HLT		
003702	022702	177776		CMP	#-2,%2	:IS QUOTIENT = -2
003706	001401			BEQ	+.4	:QUOTIENT IS WRONG
003710	000000			HLT		
003712	022703	000000		CMP	#0,%2+1	:IS REMAINDER = 0
003716	001401			BEQ	+.4	:REMAINDER IS WRONG
003720	000000			HLT		

\*\*\*\*\*  
:TEST 41 DIV -1 -9. / #3 = -3 REM = 0 PS = 10  
:\*\*\*\*\*

003722	010701			SCOPE		:TEST OF DIVIDE
003724	012702	177777		MOV	#-1,x2	:LOAD HIGH ORDER WITH -1
003730	012703	177767		MOV	#-9,x2+1	:LOAD LOW ORDER WITH -9.
003734	071227	000003		DIV	#3,x2	:DIVIDE BY #3
003740	013767	177776	005654	MOV	#PS,PSW	:SAVE PS
003746	122767	000010	005646	CMPB	#10,PSW	:IS PS = 10
003754	001401			BEG	.+4	:PS IS WRONG
003756	000000			HLT		
003760	022702	177775		CMP	#-3,x2	:IS QUOTIENT = -3
003764	001401			BEG	.+4	:QUOTIENT IS WRONG
003766	000000			HLT		
003770	022703	000000		CMP	#0,x2+1	:IS REMAINDER = 0
003774	001401			BEG	.+4	:REMAINDER IS WRONG
003776	000000			HLT		

\*\*\*\*\*  
:TEST 42 DIV 0 9. / #2 = 4 REM = 1 PS = 0  
:\*\*\*\*\*

004000	010701			SCOPE		:TEST OF DIVIDE
004002	012702	000000		MOV	#0,x2	:LOAD HIGH ORDER WITH 0
004006	012703	000011		MOV	#9,x2+1	:LOAD LOW ORDER WITH 9.
004012	071227	000002		DIV	#2,x2	:DIVIDE BY #2
004016	013767	177776	005576	MOV	#PS,PSW	:SAVE PS
004024	122767	000000	005570	CMPB	#0,PSW	:IS PS = 0
004032	001401			BEG	.+4	:PS IS WRONG
004034	000000			HLT		
004036	022702	000004		CMP	#4,x2	:IS QUOTIENT = 4
004042	001401			BEG	.+4	:QUOTIENT IS WRONG
004044	000000			HLT		
004046	022703	000001		CMP	#1,x2+1	:IS REMAINDER = 1
004052	001401			BEG	.+4	:REMAINDER IS WRONG
004054	000000			HLT		

\*\*\*\*\*  
:TEST 43 DIV -1 -9. / #2 = -4 REM = -1 PS = 10  
:\*\*\*\*\*

004056	010701			SCOPE		:TEST OF DIVIDE
004060	012702	177777		MOV	#-1,%2	:LOAD HIGH ORDER WITH -1
004064	012703	177767		MOV	#-9,%2+1	:LOAD LOW ORDER WITH -9.
004070	071227	000002		DIV	#2,%2	:DIVIDE BY #2
004074	013767	177776	005520	MOV	@#PS,PSW	:SAVE PS
004102	122767	000010	005512	CMPB	#10,PSW	:IS PS = 10
004110	001401			BEG	+.4	
004112	000000			HLT		:PS IS WRONG
004114	022702	177774		CMP	#-4,%2	:IS QUOTIENT = -4
004120	001401			BEG	+.4	
004122	000000			HLT		:QUOTIENT IS WRONG
004124	022703	177777		CMP	#-1,%2+1	:IS REMAINDER = -1
004130	001401			BEG	+.4	
004132	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 44 DIV 0 9. / #2 = -4 REM = 1 PS = 10  
:\*\*\*\*\*

004134	010701			SCOPE		:TEST OF DIVIDE
004136	012702	000000		MOV	#0,%2	:LOAD HIGH ORDER WITH 0
004142	012703	000011		MOV	#9,%2+1	:LOAD LOW ORDER WITH 9.
004146	071227	177776		DIV	#-2,%2	:DIVIDE BY #-2
004152	013767	177776	005442	MOV	@#PS,PSW	:SAVE PS
004160	122767	000010	005434	CMPB	#10,PSW	:IS PS = 10
004166	001401			BEG	+.4	
004170	000000			HLT		:PS IS WRONG
004172	022702	177774		CMP	#-4,%2	:IS QUOTIENT = -4
004176	001401			BEG	+.4	
004200	000000			HLT		:QUOTIENT IS WRONG
004202	022703	000001		CMP	#1,%2+1	:IS REMAINDER = 1
004206	001401			BEG	+.4	
004210	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 45 DIV 0 2 / #3 = 0 REM = 2 PS = 4  
\*\*\*\*\*

004212	010701			SCOPE		:TEST OF DIVIDE
004214	012702	000000		MOV	#0,%2	:LOAD HIGH ORDER WITH 0
004220	012703	000002		MOV	#2,%2+1	:LOAD LOW ORDER WITH 2
004224	071227	000003		DIV	#3,%2	:DIVIDE BY #3
004230	013767	177776	005364	MOV	3#PS,PSW	:SAVE PS
004236	122767	000004	005356	CMPB	#4,PSW	:IS PS = 4
004244	001401			BEQ	+.4	
004246	000000			HLT		:PS IS WRONG
004250	022702	000000		CMP	#0,%2	:IS QUOTIENT = 0
004254	001401			BEQ	+.4	
004256	000000			HLT		:QUOTIENT IS WRONG
004260	022703	000002		CMP	#2,%2+1	:IS REMAINDER = 2
004264	001401			BEQ	+.4	
004266	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 46 DIV 0 2 / #-3 = 0 REM = 2 PS = 4  
\*\*\*\*\*

004270	010701			SCOPE		:TEST OF DIVIDE
004272	012702	000000		MOV	#0,%2	:LOAD HIGH ORDER WITH 0
004276	012703	000002		MOV	#2,%2+1	:LOAD LOW ORDER WITH 2
004302	071227	177775		DIV	#-3,%2	:DIVIDE BY #-3
004306	013767	177776	005306	MOV	3#PS,PSW	:SAVE PS
004314	122767	000004	005300	CMPB	#4,PSW	:IS PS = 4
004322	001401			BEQ	+.4	
004324	000000			HLT		:PS IS WRONG
004326	022702	000000		CMP	#0,%2	:IS QUOTIENT = 0
004332	001401			BEQ	+.4	
004334	000000			HLT		:QUOTIENT IS WRONG
004336	022703	000002		CMP	#2,%2+1	:IS REMAINDER = 2
004342	001401			BEQ	+.4	
004344	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 47 DIV -1 -2 / #3 = 0 REM = -2 PS = 4  
:\*\*\*\*\*

004346	010701			SCOPE		;TEST OF DIVIDE
004350	012702	177777		MOV	#-1,%2	;LOAD HIGH ORDER WITH -1
004354	012703	177776		MOV	#-2,%2+1	;LOAD LOW ORDER WITH -2
004360	071227	000003		DIV	#3,%2	;DIVIDE BY #3
004364	013767	177776	005230	MOV	3#PS,PSW	;SAVE PS
004372	122767	000004	005222	CMPB	#4,PSW	;IS PS = 4
004400	001401			BEQ	+.4	
004402	000000			HLT		;PS IS WRONG
004404	022702	000000		CMP	#0,%2	;IS QUOTIENT = 0
004410	001401			BEQ	+.4	
004412	000000			HLT		;QUOTIENT IS WRONG
004414	022703	177776		CMP	#-2,%2+1	;IS REMAINDER = -2
004420	001401			BEQ	+.4	
004422	000000			HLT		;REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 50 DIV -1 -1 / #1 = -1 REM = 0 PS = 10  
:\*\*\*\*\*

004424	010701			SCOPE		;TEST OF DIVIDE
004426	012702	177777		MOV	#-1,%2	;LOAD HIGH ORDER WITH -1
004432	012703	177777		MOV	#-1,%2+1	;LOAD LOW ORDER WITH -1
004436	071227	000001		DIV	#1,%2	;DIVIDE BY #1
004442	013767	177776	005152	MOV	3#PS,PSW	;SAVE PS
004450	122767	000010	005144	CMPB	#10,PSW	;IS PS = 10
004456	001401			BEQ	+.4	
004460	000000			HLT		;PS IS WRONG
004462	022702	177777		CMP	#-1,%2	;IS QUOTIENT = -1
004466	001401			BEQ	+.4	
004470	000000			HLT		;QUOTIENT IS WRONG
004472	022703	000000		CMP	#0,%2+1	;IS REMAINDER = 0
004476	001401			BEQ	+.4	
004500	000000			HLT		;REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 51 DIV 0 0 / #1 = 0 REM = 0 PS = 4  
:\*\*\*\*\*

004502	010701			SCOPE		;TEST OF DIVIDE
004504	012702	000000		MOV	#0,%2	;LOAD HIGH ORDER WITH 0
004510	012703	000000		MOV	#0,%2+1	;LOAD LOW ORDER WITH 0
004514	071227	000001		DIV	#1,%2	;DIVIDE BY #1
004520	013767	177776	005074	MOV	3#PS,PSW	;SAVE PS
004526	122767	000004	005066	CMPB	#4,PSW	;IS PS = 4
004534	001401			BEQ	+.4	
004536	000000			HLT		;PS IS WRONG
004540	022702	000000		CMP	#0,%2	;IS QUOTIENT = 0
004544	001401			BEQ	+.4	
004546	000000			HLT		;QUOTIENT IS WRONG
004550	022703	000000		CMP	#0,%2+1	;IS REMAINDER = 0
004554	001401			BEQ	+.4	
004556	000000			HLT		;REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 52 DIV -1 125252 / #2 = 152525 REM = 0 PS = 10  
:\*\*\*\*\*

004560	010701			SCOPE		;TEST OF DIVIDE
004562	012702	177777		MOV	#-1,%2	;LOAD HIGH ORDER WITH -1
004566	012703	125252		MOV	#125252,%2+1	;LOAD LOW ORDER WITH 125252
004572	071227	000002		DIV	#2,%2	;DIVIDE BY #2
004576	013767	177776	005016	MOV	3#PS,PSW	;SAVE PS
004604	122767	000010	005010	CMPB	#10,PSW	;IS PS = 10
004612	001401			BEQ	+.4	
004614	000000			HLT		;PS IS WRONG
004616	022702	152525		CMP	#152525,%2	;IS QUOTIENT = 152525
004622	001401			BEQ	+.4	
004624	000000			HLT		;QUOTIENT IS WRONG
004626	022703	000000		CMP	#0,%2+1	;IS REMAINDER = 0
004632	001401			BEQ	+.4	
004634	000000			HLT		;REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 53 DIV 0 52525 / #2 = 25252 REM = 1 PS = 0  
: \*\*\*\*\*

004636	010701			SCOPE		; TEST OF DIVIDE
004640	012702	000000		MOV	#0,%2	; LOAD HIGH ORDER WITH 0
004644	012703	052525		MOV	#52525,%2+1	; LOAD LOW ORDER WITH 52525
004650	071227	000002		DIV	#2,%2	; DIVIDE BY #2
004654	013767	177776	004740	MOV	2#PS,PSW	; SAVE PS
004662	122767	000000	004732	CMPB	#0,PSW	; IS PS = 0
004670	001401			BEQ	+.4	
004672	000000			HLT		; PS IS WRONG
004674	022702	025252		CMP	#25252,%2	; IS QUOTIENT = 25252
004700	001401			BEQ	+.4	
004702	000000			HLT		; QUOTIENT IS WRONG
004704	022703	000001		CMP	#1,%2+1	; IS REMAINDER = 1
004710	001401			BEQ	+.4	
004712	000000			HLT		; REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 54 DIV -1 -1 / #-1 = 1 REM = 0 PS = 0  
: \*\*\*\*\*

004714	010701			SCOPE		; TEST OF DIVIDE
004716	012702	177777		MOV	#-1,%2	; LOAD HIGH ORDER WITH -1
004722	012703	177777		MOV	#-1,%2+1	; LOAD LOW ORDER WITH -1
004726	071227	177777		DIV	#-1,%2	; DIVIDE BY #-1
004732	013767	177776	004662	MOV	2#PS,PSW	; SAVE PS
004740	122767	000000	004654	CMPB	#0,PSW	; IS PS = 0
004746	001401			BEQ	+.4	
004750	000000			HLT		; PS IS WRONG
004752	022702	000001		CMP	#1,%2	; IS QUOTIENT = 1
004756	001401			BEQ	+.4	
004760	000000			HLT		; QUOTIENT IS WRONG
004762	022703	000000		CMP	#0,%2+1	; IS REMAINDER = 0
004766	001401			BEQ	+.4	
004770	000000			HLT		; REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 55 DIV 25253 0 / 0125252 = 100000 REM = 0 PS = 10  
\*\*\*\*\*

004772	010701			SCOPE		:TEST OF DIVIDE
004774	012702	025253		MOV	025253,x2	:LOAD HIGH ORDER WITH 25253
005000	012703	000000		MOV	00,x2+1	:LOAD LOW ORDER WITH 0
005004	071227	125252		DIV	0125252,x2	:DIVIDE BY 0125252
005010	013767	177776	004604	MOV	00PS,PSH	:SAVE PS
005016	122767	000010	004576	CMPB	010,PSH	:IS PS = 10
005024	001401			BEQ	+.4	
005026	000000			HLT		:PS IS WRONG
005030	022702	100000		CMP	0100000,x2	:IS QUOTIENT = 100000
005034	001401			BEQ	+.4	
005036	000000			HLT		:QUOTIENT IS WRONG
005040	022703	000000		CMP	00,x2+1	:IS REMAINDER = 0
005044	001401			BEQ	+.4	
005046	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 56 DIV 25253 1 / 0125252 = 100000 REM = 1 PS = 10  
\*\*\*\*\*

005050	010701			SCOPE		:TEST OF DIVIDE
005052	012702	025253		MOV	025253,x2	:LOAD HIGH ORDER WITH 25253
005056	012703	000001		MOV	01,x2+1	:LOAD LOW ORDER WITH 1
005062	071227	125252		DIV	0125252,x2	:DIVIDE BY 0125252
005066	013767	177776	004526	MOV	00PS,PSH	:SAVE PS
005074	122767	000010	004520	CMPB	010,PSH	:IS PS = 10
005102	001401			BEQ	+.4	
005104	000000			HLT		:PS IS WRONG
005106	022702	100000		CMP	0100000,x2	:IS QUOTIENT = 100000
005112	001401			BEQ	+.4	
005114	000000			HLT		:QUOTIENT IS WRONG
005116	022703	000001		CMP	01,x2+1	:IS REMAINDER = 1
005122	001401			BEQ	+.4	
005124	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 57 DIV 3777 7777 / 87777 = 7777 REM = 7776 PS = 0  
\*\*\*\*\*

Address	Instruction	Operand 1	Operand 2	Label	Comment
005126	010701				SCOPE
005130	012702	037777			MOV 837777,x2
005134	012703	077777			MOV 877777,x2+1
005140	071227	077777			DIV 877777,x2
005144	013767	177776	004450		MOV 38PS,PSW ;SAVE PS
005152	122767	000000	004442		CMPB 80,PSW ;IS PS = 0
005160	001401				BEQ .+4
005162	000000				HLT ;PS IS WRONG
005164	022702	077777			CMP 877777,x2 ;IS QUOTIENT = 7777
005170	001401				BEQ .+4
005172	000000				HLT ;QUOTIENT IS WRONG
005174	022703	077776			CMP 877776,x2+1 ;IS REMAINDER = 7776
005200	001401				BEQ .+4
005202	000000				HLT ;REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 60 DIV 0 10000 / 82 = 40000 REM = 0 PS = 0  
\*\*\*\*\*

Address	Instruction	Operand 1	Operand 2	Label	Comment
005204	010701				SCOPE
005206	012702	000000			MOV 80,x2
005212	012703	100000			MOV 8100000,x2+1
005216	071227	000002			DIV 82,x2
005222	013767	177776	004372		MOV 38PS,PSW ;SAVE PS
005230	122767	000000	004364		CMPB 80,PSW ;IS PS = 0
005236	001401				BEQ .+4
005240	000000				HLT ;PS IS WRONG
005242	022702	040000			CMP 840000,x2 ;IS QUOTIENT = 40000
005246	001401				BEQ .+4
005250	000000				HLT ;QUOTIENT IS WRONG
005252	022703	000000			CMP 80,x2+1 ;IS REMAINDER = 0
005256	001401				BEQ .+4
005260	000000				HLT ;REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 61 DIV 0 100001 / #2 = 40000 REM = 1 PS = 0  
\*\*\*\*\*

005262	010701			SCOPE		:TEST OF DIVIDE
005264	012702	000000		MOV	#0,x2	:LOAD HIGH ORDER WITH 0
005270	012703	100001		MOV	#100001,x2+1	:LOAD LOW ORDER WITH 100001
005274	071227	000002		DIV	#2,x2	:DIVIDE BY #2
005300	013767	177776	004314	MOV	#PS,PSW	:SAVE PS
005306	122767	000000	004306	CMPB	#0,PSW	:IS PS = 0
005314	001401			BEG	.+4	
005316	000000			HLT		:PS IS WRONG
005320	022702	040000		CMP	#40000,x2	:IS QUOTIENT = 40000
005324	001401			BEG	.+4	
005326	000000			HLT		:QUOTIENT IS WRONG
005330	022703	000001		CMP	#1,x2+1	:IS REMAINDER = 1
005334	001401			BEG	.+4	
005336	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 62 DIV 20000 37776 / #77777 = 40000 REM = 77776 PS = 0  
\*\*\*\*\*

005340	010701			SCOPE		:TEST OF DIVIDE
005342	012702	020000		MOV	#20000,x2	:LOAD HIGH ORDER WITH 20000
005346	012703	037776		MOV	#37776,x2+1	:LOAD LOW ORDER WITH 37776
005352	071227	077777		DIV	#77777,x2	:DIVIDE BY #77777
005356	013767	177776	004236	MOV	#PS,PSW	:SAVE PS
005364	122767	000000	004230	CMPB	#0,PSW	:IS PS = 0
005372	001401			BEG	.+4	
005374	000000			HLT		:PS IS WRONG
005376	022702	040000		CMP	#40000,x2	:IS QUOTIENT = 40000
005402	001401			BEG	.+4	
005404	000000			HLT		:QUOTIENT IS WRONG
005406	022703	077776		CMP	#77776,x2+1	:IS REMAINDER = 77776
005412	001401			BEG	.+4	
005414	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 63 DIV 17777 7777 / 8177776 = 40000 REM = 17777 PS = 0  
\*\*\*\*\*

005416	010701			SCOPE		;TEST OF DIVIDE
005420	012702	17777		MOV	8177777,x2	;LOAD HIGH ORDER WITH 17777
005424	012703	07777		MOV	877777,x2+1	;LOAD LOW ORDER WITH 7777
005430	071227	177776		DIV	8177776,x2	;DIVIDE BY 8177776
005434	013767	177776	004160	MOV	38PS,PSH	;SAVE PS
005442	122767	000000	004152	CHPB	80,PSH	;IS PS = 0
005450	001401			BEQ	+.4	;PS IS WRONG
005452	000000			HLT		
005454	022702	040000		CHP	840000,x2	;IS QUOTIENT = 40000
005460	001401			BEQ	+.4	;QUOTIENT IS WRONG
005462	000000			HLT		
005464	022703	17777		CHP	8177777,x2+1	;IS REMAINDER = 17777
005470	001401			BEQ	+.4	;REMAINDER IS WRONG
005472	000000			HLT		

\*\*\*\*\*  
:TEST 64 DIV 15777 100001 / 8100000 = 40000 REM = 100001 PS = 0  
\*\*\*\*\*

005474	010701			SCOPE		;TEST OF DIVIDE
005476	012702	15777		MOV	8157777,x2	;LOAD HIGH ORDER WITH 15777
005502	012703	100001		MOV	8100001,x2+1	;LOAD LOW ORDER WITH 100001
005506	071227	100000		DIV	8100000,x2	;DIVIDE BY 8100000
005512	013767	177776	004102	MOV	38PS,PSH	;SAVE PS
005520	122767	000000	004074	CHPB	80,PSH	;IS PS = 0
005526	001401			BEQ	+.4	;PS IS WRONG
005530	000000			HLT		
005532	022702	040000		CHP	840000,x2	;IS QUOTIENT = 40000
005536	001401			BEQ	+.4	;QUOTIENT IS WRONG
005540	000000			HLT		
005542	022703	100001		CHP	8100001,x2+1	;IS REMAINDER = 100001
005546	001401			BEQ	+.4	;REMAINDER IS WRONG
005550	000000			HLT		

\*\*\*\*\*  
:TEST 65 DIV 0 52525 / #52525 = 1 REM = 0 PS = 0  
:\*\*\*\*\*

005552	010701			SCOPE					
005554	012702	000000		MOV	#0, X2				;TEST OF DIVIDE
005560	012703	052525		MOV	#52525, X2+1				;LOAD HIGH ORDER WITH 0
005564	071227	052525		DIV	#52525, X2				;LOAD LOW ORDER WITH 52525
005570	013767	177776	004024	MOV	#PS, PSH				;DIVIDE BY #52525
									;SAVE PS
005576	122767	000000	004016	CHPB	#0, PSH				;IS PS = 0
005604	001401			BEQ	+.4				
005606	000000			HLT					;PS IS WRONG
005610	022702	000001		CHP	#1, X2				;IS QUOTIENT = 1
005614	001401			BEQ	+.4				
005616	000000			HLT					;QUOTIENT IS WRONG
005620	022703	000000		CHP	#0, X2+1				;IS REMAINDER = 0
005624	001401			BEQ	+.4				
005626	000000			HLT					;REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 66 DIV 0 52524 / #52525 = 0 REM = 52524 PS = 4  
:\*\*\*\*\*

005630	010701			SCOPE					
005632	012702	000000		MOV	#0, X2				;TEST OF DIVIDE
005636	012703	052524		MOV	#52524, X2+1				;LOAD HIGH ORDER WITH 0
005642	071227	052525		DIV	#52525, X2				;LOAD LOW ORDER WITH 52524
005646	013767	177776	003746	MOV	#PS, PSH				;DIVIDE BY #52525
									;SAVE PS
005654	122767	000004	003740	CHPB	#4, PSH				;IS PS = 4
005662	001401			BEQ	+.4				
005664	000000			HLT					;PS IS WRONG
005666	022702	000000		CHP	#0, X2				;IS QUOTIENT = 0
005672	001401			BEQ	+.4				
005674	000000			HLT					;QUOTIENT IS WRONG
005676	022703	052524		CHP	#52524, X2+1				;IS REMAINDER = 52524
005702	001401			BEQ	+.4				
005704	000000			HLT					;REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 67 DIV 0 0 / 0125252 = 0 REM = 0 PS = 4  
: \*\*\*\*\*

005706	010701			SCOPE		: TEST OF DIVIDE
005710	012702	000000		MOV	00,x2	: LOAD HIGH ORDER WITH 0
005714	012703	000000		MOV	00,x2+1	: LOAD LOW ORDER WITH 0
005720	071227	125252		DIV	0125252,x2	: DIVIDE BY 0125252
005724	013767	177776	003670	MOV	00PS,PSH	: SAVE PS
005732	122767	000004	003662	CMPB	04,PSH	: IS PS = 4
005740	001401			BEQ	+.4	: PS IS WRONG
005742	000000			HLT		
005744	022702	000000		CMP	00,x2	: IS QUOTIENT = 0
005750	001401			BEQ	+.4	: QUOTIENT IS WRONG
005752	000000			HLT		
005754	022703	000000		CMP	00,x2+1	: IS REMAINDER = 0
005760	001401			BEQ	+.4	: REMAINDER IS WRONG
005762	000000			HLT		

\*\*\*\*\*  
: TEST 70 DIV 177614 66560 / 040342 = 177070 REM = 0 PS = 10  
: \*\*\*\*\*

005764	010701			SCOPE		: TEST OF DIVIDE
005766	012702	177614		MOV	0177614,x2	: LOAD HIGH ORDER WITH 177614
005772	012703	066560		MOV	066560,x2+1	: LOAD LOW ORDER WITH 66560
005776	071227	040342		DIV	040342,x2	: DIVIDE BY 040342
006002	013767	177776	003612	MOV	00PS,PSH	: SAVE PS
006010	122767	000010	003604	CMPB	010,PSH	: IS PS = 10
006016	001401			BEQ	+.4	: PS IS WRONG
006020	000000			HLT		
006022	022702	177070		CMP	0177070,x2	: IS QUOTIENT = 177070
006026	001401			BEQ	+.4	: QUOTIENT IS WRONG
006030	000000			HLT		
006032	022703	000000		CMP	00,x2+1	: IS REMAINDER = 0
006036	001401			BEQ	+.4	: REMAINDER IS WRONG
006040	000000			HLT		

\*\*\*\*\*  
:TEST 71 DIV 0 77777 / #0 = DUMMY REM = DUMMY PS = 3  
:\*\*\*\*\*

006042	010701			SCOPE		:TEST OF DIVIDE
006044	012702	000000		MOV	#0,x2	:LOAD HIGH ORDER WITH 0
006050	012703	077777		MOV	#77777,x2+1	:LOAD LOW ORDER WITH 77777
006054	071227	000000		DIV	#0,x2	:DIVIDE BY #0
006060	013767	177776	003534	MOV	#PS,PSW	:SAVE PS
006066	042767	000014	003526	BIC	#14,PSW	
006074	122767	000003	003520	CHPB	#3,PSW	:IS PS = 3
006102	001401			BEQ	+.4	
006104	000000			HLT		:PS IS WRONG

\*\*\*\*\*  
:TEST 72 DIV 77777 177777 / #2 = DUMMY REM = DUMMY PS = 2  
:\*\*\*\*\*

006106	010701			SCOPE		:TEST OF DIVIDE
006110	012702	077777		MOV	#77777,x2	:LOAD HIGH ORDER WITH 77777
006114	012703	177777		MOV	#177777,x2+1	:LOAD LOW ORDER WITH 177777
006120	071227	000002		DIV	#2,x2	:DIVIDE BY #2
006124	013767	177776	003470	MOV	#PS,PSW	:SAVE PS
006132	042767	000014	003462	BIC	#14,PSW	
006140	122767	000002	003454	CHPB	#2,PSW	:IS PS = 2
006146	001401			BEQ	+.4	
006150	000000			HLT		:PS IS WRONG

\*\*\*\*\*  
:TEST 73 DIV 0 4 / #2 = 2 REM = 0 PS = 0  
\*\*\*\*\*

006152	010701			SCOPE		:TEST OF DIVIDE
006154	012704	000000		MOV	#0,%4	:LOAD HIGH ORDER WITH 0
006160	012705	000004		MOV	#4,%4+1	:LOAD LOW ORDER WITH 4
006164	071427	000002		DIV	#2,%4	:DIVIDE BY #2
006170	013767	177776	003424	MOV	2#PS,PSW	:SAVE PS
006176	122767	000000	003416	CMPB	#0,PSW	:IS PS = 0
006204	001401			BEG	+.4	
006206	000000			HLT		:PS IS WRONG
006210	022704	000002		CMP	#2,%4	:IS QUOTIENT = 2
006214	001401			BEG	+.4	
006216	000000			HLT		:QUOTIENT IS WRONG
006220	022705	000000		CMP	#0,%4+1	:IS REMAINDER = 0
006224	001401			BEG	+.4	
006226	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 74 DIV 0 9. / #3 = 3 REM = 0 PS = 0  
\*\*\*\*\*

006230	010701			SCOPE		:TEST OF DIVIDE
006232	012704	000000		MOV	#0,%4	:LOAD HIGH ORDER WITH 0
006236	012705	000011		MOV	#9,%4+1	:LOAD LOW ORDER WITH 9.
006242	071427	000003		DIV	#3,%4	:DIVIDE BY #3
006246	013767	177776	003346	MOV	2#PS,PSW	:SAVE PS
006254	122767	000000	003340	CMPB	#0,PSW	:IS PS = 0
006262	001401			BEG	+.4	
006264	000000			HLT		:PS IS WRONG
006266	022704	000003		CMP	#3,%4	:IS QUOTIENT = 3
006272	001401			BEG	+.4	
006274	000000			HLT		:QUOTIENT IS WRONG
006276	022705	000000		CMP	#0,%4+1	:IS REMAINDER = 0
006302	001401			BEG	+.4	
006304	000000			HLT		:REMAINDER IS WRONG



\*\*\*\*\*  
:TEST 75 DIV -1 -4 / #2 = -2 REM = 0 PS = 10  
:\*\*\*\*\*

006306	010701			SCOPE		:TEST OF DIVIDE
006310	012704	177777		MOV	#-1,%4	:LOAD HIGH ORDER WITH -1
006314	012705	177774		MOV	#-4,%4+1	:LOAD LOW ORDER WITH -4
006320	071427	000002		DIV	#2,%4	:DIVIDE BY #2
006324	013767	177776	003270	MOV	2#PS,PSW	:SAVE PS
006332	122767	000010	003262	CMPB	#10,PSW	:IS PS = 10
006340	001401			BEG	+.4	
006342	000000			HLT		:PS IS WRONG
006344	022704	177776		CMP	#-2,%4	:IS QUOTIENT = -2
006350	001401			BEG	+.4	
006352	000000			HLT		:QUOTIENT IS WRONG
006354	022705	000000		CMP	#0,%4+1	:IS REMAINDER = 0
006360	001401			BEG	+.4	
006362	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 76 DIV -1 -9. / #3 = -3 REM = 0 PS = 10  
:\*\*\*\*\*

006364	010701			SCOPE		:TEST OF DIVIDE
006366	012704	177777		MOV	#-1,%4	:LOAD HIGH ORDER WITH -1
006372	012705	177767		MOV	#-9.%4+1	:LOAD LOW ORDER WITH -9.
006376	071427	000003		DIV	#3,%4	:DIVIDE BY #3
006402	013767	177776	003212	MOV	2#PS,PSW	:SAVE PS
006410	122767	000010	003204	CMPB	#10,PSW	:IS PS = 10
006416	001401			BEG	+.4	
006420	000000			HLT		:PS IS WRONG
006422	022704	177775		CMP	#-3,%4	:IS QUOTIENT = -3
006426	001401			BEG	+.4	
006430	000000			HLT		:QUOTIENT IS WRONG
006432	022705	000000		CMP	#0,%4+1	:IS REMAINDER = 0
006436	001401			BEG	+.4	
006440	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 77 DIV 0 9. / #2 = 4 REM = 1 PS = 0  
\*\*\*\*\*

006442	010701			SCOPE		:TEST OF DIVIDE
006444	012704	000000		MOV	#0,%4	:LOAD HIGH ORDER WITH 0
006450	012705	000011		MOV	#9,%4+1	:LOAD LOW ORDER WITH 9.
006454	071427	000002		DIV	#2,%4	:DIVIDE BY #2
006460	013767	177776	003134	MOV	#PS,PSW	:SAVE PS
006466	122767	000000	003126	CMPB	#0,PSW	:IS PS = 0
006474	001401			BEQ	+.4	:PS IS WRONG
006476	000000			HLT		
006500	022704	000004		CMP	#4,%4	:IS QUOTIENT = 4
006504	001401			BEQ	+.4	:QUOTIENT IS WRONG
006506	000000			HLT		
006510	022705	000001		CMP	#1,%4+1	:IS REMAINDER = 1
006514	001401			BEQ	+.4	:REMAINDER IS WRONG
006516	000000			HLT		

\*\*\*\*\*  
:TEST 100 DIV -1 -9. / #2 = -4 REM = -1 PS = 10  
\*\*\*\*\*

006520	010701			SCOPE		:TEST OF DIVIDE
006522	012704	177777		MOV	#-1,%4	:LOAD HIGH ORDER WITH -1
006526	012705	177767		MOV	#-9,%4+1	:LOAD LOW ORDER WITH -9.
006532	071427	000002		DIV	#2,%4	:DIVIDE BY #2
006536	013767	177776	003056	MOV	#PS,PSW	:SAVE PS
006544	122767	000010	003050	CMPB	#10,PSW	:IS PS = 10
006552	001401			BEQ	+.4	:PS IS WRONG
006554	000000			HLT		
006556	022704	177774		CMP	#-4,%4	:IS QUOTIENT = -4
006562	001401			BEQ	+.4	:QUOTIENT IS WRONG
006564	000000			HLT		
006566	022705	177777		CMP	#-1,%4+1	:IS REMAINDER = -1
006572	001401			BEQ	+.4	:REMAINDER IS WRONG
006574	000000			HLT		

\*\*\*\*\*  
 : TEST 101 DIV 0 9. / 8-2 = -4 REM = 1 PS = 10  
 : \*\*\*\*\*

006576	010701			SCOPE		: TEST OF DIVIDE
006600	012704	000000		MOV	80,%4	: LOAD HIGH ORDER WITH 0
006604	012705	000011		MOV	89,%4+1	: LOAD LOW ORDER WITH 9.
006610	071427	177776		DIV	8-2,%4	: DIVIDE BY 8-2
006614	013767	177776	003000	MOV	38PS,PSW	: SAVE PS
006622	122767	000010	002772	CMPB	810,PSW	: IS PS = 10
006630	001401			BEQ	.+4	: PS IS WRONG
006632	000000			HLT		
006634	022704	177774		CMP	8-4,%4	: IS QUOTIENT = -4
006640	001401			BEQ	.+4	: QUOTIENT IS WRONG
006642	000000			HLT		
006644	022705	000001		CMP	81,%4+1	: IS REMAINDER = 1
006650	001401			BEQ	.+4	: REMAINDER IS WRONG
006652	000000			HLT		

\*\*\*\*\*  
 : TEST 102 DIV 0 2 / 83 = 0 REM = 2 PS = 4  
 : \*\*\*\*\*

006654	010701			SCOPE		: TEST OF DIVIDE
006656	012704	000000		MOV	80,%4	: LOAD HIGH ORDER WITH 0
006662	012705	000002		MOV	82,%4+1	: LOAD LOW ORDER WITH 2
006666	071427	000003		DIV	83,%4	: DIVIDE BY 83
006672	013767	177776	002722	MOV	38PS,PSW	: SAVE PS
006700	122767	000004	002714	CMPB	84,PSW	: IS PS = 4
006706	001401			BEQ	.+4	: PS IS WRONG
006710	000000			HLT		
006712	022704	000000		CMP	80,%4	: IS QUOTIENT = 0
006716	001401			BEQ	.+4	: QUOTIENT IS WRONG
006720	000000			HLT		
006722	022705	000002		CMP	82,%4+1	: IS REMAINDER = 2
006726	001401			BEQ	.+4	: REMAINDER IS WRONG
006730	000000			HLT		

\*\*\*\*\*  
: TEST 103 DIV 0 2 / 8-3 = 0 REM = 2 PS = 4  
: \*\*\*\*\*

006732	010701			SCOPE		: TEST OF DIVIDE
006734	012704	000000		MOV	#0, %4	: LOAD HIGH ORDER WITH 0
006740	012705	000002		MOV	#2, %4+1	: LOAD LOW ORDER WITH 2
006744	071427	177775		DIV	#-3, %4	: DIVIDE BY #-3
006750	013767	177776	002644	MOV	3#PS, PSM	: SAVE PS
006756	122767	000004	002636	CMPB	#4, PSM	: IS PS = 4
006764	001401			BEQ	+.4	
006766	000000			HLT		: PS IS WRONG
006770	022704	000000		CMP	#0, %4	: IS QUOTIENT = 0
006774	001401			BEQ	+.4	
006776	000000			HLT		: QUOTIENT IS WRONG
007000	022705	000002		CMP	#2, %4+1	: IS REMAINDER = 2
007004	001401			BEQ	+.4	
007006	000000			HLT		: REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 104 DIV -1 -2 / #3 = 0 REM = -2 PS = 4  
: \*\*\*\*\*

007010	010701			SCOPE		: TEST OF DIVIDE
007012	012704	177777		MOV	#-1, %4	: LOAD HIGH ORDER WITH -1
007016	012705	177776		MOV	#-2, %4+1	: LOAD LOW ORDER WITH -2
007022	071427	000003		DIV	#3, %4	: DIVIDE BY #3
007026	013767	177776	002566	MOV	3#PS, PSM	: SAVE PS
007034	122767	000004	002560	CMPB	#4, PSM	: IS PS = 4
007042	001401			BEQ	+.4	
007044	000000			HLT		: PS IS WRONG
007046	022704	000000		CMP	#0, %4	: IS QUOTIENT = 0
007052	001401			BEQ	+.4	
007054	000000			HLT		: QUOTIENT IS WRONG
007056	022705	177776		CMP	#-2, %4+1	: IS REMAINDER = -2
007062	001401			BEQ	+.4	
007064	000000			HLT		: REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 105 DIV -1 -1 / #1 = -1 REM = 0 PS = 10  
\*\*\*\*\*

007066	010701			SCOPE		:TEST OF DIVIDE
007070	012704	177777		MOV	#-1,%4	:LOAD HIGH ORDER WITH -1
007074	012705	177777		MOV	#-1,%4+1	:LOAD LOW ORDER WITH -1
007100	071427	000001		DIV	#1,%4	:DIVIDE BY #1
007104	013767	177776	002510	MOV	2#PS,PSW	:SAVE PS
007112	122767	000010	002502	CMPB	#10,PSW	:IS PS = 10
007120	001401			BEG	.+4	:PS IS WRONG
007122	000000			HLT		
007124	022704	177777		CMP	#-1,%4	:IS QUOTIENT = -1
007130	001401			BEG	.+4	:QUOTIENT IS WRONG
007132	000000			HLT		
007134	022705	000000		CMP	#0,%4+1	:IS REMAINDER = 0
007140	001401			BEG	.+4	:REMAINDER IS WRONG
007142	000000			HLT		

\*\*\*\*\*  
:TEST 106 DIV 0 0 / #1 = 0 REM = 0 PS = 4  
\*\*\*\*\*

007144	010701			SCOPE		:TEST OF DIVIDE
007146	012704	000000		MOV	#0,%4	:LOAD HIGH ORDER WITH 0
007152	012705	000000		MOV	#0,%4+1	:LOAD LOW ORDER WITH 0
007156	071427	000001		DIV	#1,%4	:DIVIDE BY #1
007162	013767	177776	002432	MOV	2#PS,PSW	:SAVE PS
007170	122767	000004	002424	CMPB	#4,PSW	:IS PS = 4
007176	001401			BEG	.+4	:PS IS WRONG
007200	000000			HLT		
007202	022704	000000		CMP	#0,%4	:IS QUOTIENT = 0
007206	001401			BEG	.+4	:QUOTIENT IS WRONG
007210	000000			HLT		
007212	022705	000000		CMP	#0,%4+1	:IS REMAINDER = 0
007216	001401			BEG	.+4	:REMAINDER IS WRONG
007220	000000			HLT		

\*\*\*\*\*  
:TEST 107 DIV -1 125252 / 82 = 152525 REM = 0 PS = 10  
\*\*\*\*\*

007222	010701			SCOPE		:TEST OF DIVIDE
007224	012704	177777		MOV	8-1,x4	:LOAD HIGH ORDER WITH -1
007230	012705	125252		MOV	8125252,x4+1	:LOAD LOW ORDER WITH 125252
007234	071427	000002		DIV	82,x4	:DIVIDE BY 82
007240	013767	177776	002354	MOV	88PS,PSW	:SAVE PS
007246	122767	000010	002346	CHPB	810,PSW	:IS PS = 10
007254	001401			BEQ	+.4	:PS IS WRONG
007256	000000			HLT		
007260	022704	152525		CHP	8152525,x4	:IS QUOTIENT = 152525
007264	001401			BEQ	+.4	:QUOTIENT IS WRONG
007266	000000			HLT		
007270	022705	000000		CHP	80,x4+1	:IS REMAINDER = 0
007274	001401			BEQ	+.4	:REMAINDER IS WRONG
007276	000000			HLT		

\*\*\*\*\*  
:TEST 110 DIV 0 52525 / 82 = 25252 REM = 1 PS = 0  
\*\*\*\*\*

007300	010701			SCOPE		:TEST OF DIVIDE
007302	012704	000000		MOV	80,x4	:LOAD HIGH ORDER WITH 0
007306	012705	052525		MOV	852525,x4+1	:LOAD LOW ORDER WITH 52525
007312	071427	000002		DIV	82,x4	:DIVIDE BY 82
007316	013767	177776	002276	MOV	88PS,PSW	:SAVE PS
007324	122767	000000	002270	CHPB	80,PSW	:IS PS = 0
007332	001401			BEQ	+.4	:PS IS WRONG
007334	000000			HLT		
007336	022704	025252		CHP	825252,x4	:IS QUOTIENT = 25252
007342	001401			BEQ	+.4	:QUOTIENT IS WRONG
007344	000000			HLT		
007346	022705	000001		CHP	81,x4+1	:IS REMAINDER = 1
007352	001401			BEQ	+.4	:REMAINDER IS WRONG
007354	000000			HLT		

\*\*\*\*\*  
:TEST 111 DIV -1 -1 / 0-1 = 1 REM = 0 PS = 0  
\*\*\*\*\*

007356	010701			SCOPE		:TEST OF DIVIDE
007360	012704	177777		MOV	0-1,x4	:LOAD HIGH ORDER WITH -1
007364	012705	177777		MOV	0-1,x4+1	:LOAD LOW ORDER WITH -1
007370	071427	177777		DIV	0-1,x4	:DIVIDE BY 0-1
007374	013767	177776	002220	MOV	00PS,PSW	:SAVE PS
007402	122767	000000	002212	CMPB	00,PSW	:IS PS = 0
007410	001401			BEG	.+4	
007412	000000			HLT		:PS IS WRONG
007414	022704	000001		CMP	01,x4	:IS QUOTIENT = 1
007420	001401			BEG	.+4	
007422	000000			HLT		:QUOTIENT IS WRONG
007424	022705	000000		CMP	00,x4+1	:IS REMAINDER = 0
007430	001401			BEG	.+4	
007432	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 112 DIV 25253 0 / 0125252 = 100000 REM = 0 PS = 10  
\*\*\*\*\*

007434	010701			SCOPE		:TEST OF DIVIDE
007436	012704	025253		MOV	025253,x4	:LOAD HIGH ORDER WITH 25253
007442	012705	000000		MOV	00,x4+1	:LOAD LOW ORDER WITH 0
007446	071427	125252		DIV	0125252,x4	:DIVIDE BY 0125252
007452	013767	177776	002142	MOV	00PS,PSW	:SAVE PS
007460	122767	000010	002134	CMPB	010,PSW	:IS PS = 10
007466	001401			BEG	.+4	
007470	000000			HLT		:PS IS WRONG
007472	022704	100000		CMP	0100000,x4	:IS QUOTIENT = 100000
007476	001401			BEG	.+4	
007500	000000			HLT		:QUOTIENT IS WRONG
007502	022705	000000		CMP	00,x4+1	:IS REMAINDER = 0
007506	001401			BEG	.+4	
007510	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 113 DIV 25253 1 / 0125252 = 100000 REM = 1 PS = 10  
\*\*\*\*\*

007512	010701			SCOPE		:TEST OF DIVIDE
007514	012704	025253		MOV	025253,x4	:LOAD HIGH ORDER WITH 25253
007520	012705	000001		MOV	01,x4+1	:LOAD LOW ORDER WITH 1
007524	071427	125252		DIV	0125252,x4	:DIVIDE BY 0125252
007530	013767	177776	002064	MOV	00PS,PSW	:SAVE PS
007536	122767	000010	002056	CMPB	010,PSW	:IS PS = 10
007544	001401			BEG	.+4	
007546	000000			HLT		:PS IS WRONG
007550	022704	100000		CMP	0100000,x4	:IS QUOTIENT = 100000
007554	001401			BEG	.+4	
007556	000000			HLT		:QUOTIENT IS WRONG
007560	022705	000001		CMP	01,x4+1	:IS REMAINDER = 1
007564	001401			BEG	.+4	
007566	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 114 DIV 37777 77777 / 077777 = 77777 REM = 77776 PS = 0  
\*\*\*\*\*

007570	010701			SCOPE		:TEST OF DIVIDE
007572	012704	037777		MOV	037777,x4	:LOAD HIGH ORDER WITH 37777
007576	012705	077777		MOV	077777,x4+1	:LOAD LOW ORDER WITH 77777
007602	071427	077777		DIV	077777,x4	:DIVIDE BY 077777
007606	013767	177776	002006	MOV	00PS,PSW	:SAVE PS
007614	122767	000000	002000	CMPB	00,PSW	:IS PS = 0
007622	001401			BEG	.+4	
007624	000000			HLT		:PS IS WRONG
007626	022704	077777		CMP	077777,x4	:IS QUOTIENT = 77777
007632	001401			BEG	.+4	
007634	000000			HLT		:QUOTIENT IS WRONG
007636	022705	077776		CMP	077776,x4+1	:IS REMAINDER = 77776
007642	001401			BEG	.+4	
007644	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 115 DIV 0 100000 / #2 = 40000 REM = 0 PS = 0  
\*\*\*\*\*

007646	010701			SCOPE		:TEST OF DIVIDE
007650	012704	000000		MOV	#0,x4	:LOAD HIGH ORDER WITH 0
007654	012705	100000		MOV	#100000,x4+1	:LOAD LOW ORDER WITH 100000
007660	071427	000002		DIV	#2,x4	:DIVIDE BY #2
007664	013767	177776	001730	MOV	2#PS,PSW	:SAVE PS
007672	122767	000000	001722	COMP	#0,PSW	:IS PS = 0
007700	001401			BEG	.+4	
007702	000000			HLT		:PS IS WRONG
007704	022704	040000		COMP	#40000,x4	:IS QUOTIENT = 40000
007710	001401			BEG	.+4	
007712	000000			HLT		:QUOTIENT IS WRONG
007714	022705	000000		COMP	#0,x4+1	:IS REMAINDER = 0
007720	001401			BEG	.+4	
007722	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 116 DIV 0 100001 / #2 = 40000 REM = 1 PS = 0  
\*\*\*\*\*

007724	010701			SCOPE		:TEST OF DIVIDE
007726	012704	000000		MOV	#0,x4	:LOAD HIGH ORDER WITH 0
007732	012705	100001		MOV	#100001,x4+1	:LOAD LOW ORDER WITH 100001
007736	071427	000002		DIV	#2,x4	:DIVIDE BY #2
007742	013767	177776	001652	MOV	2#PS,PSW	:SAVE PS
007750	122767	000000	001644	COMP	#0,PSW	:IS PS = 0
007756	001401			BEG	.+4	
007760	000000			HLT		:PS IS WRONG
007762	022704	040000		COMP	#40000,x4	:IS QUOTIENT = 40000
007766	001401			BEG	.+4	
007770	000000			HLT		:QUOTIENT IS WRONG
007772	022705	000001		COMP	#1,x4+1	:IS REMAINDER = 1
007776	001401			BEG	.+4	
010000	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 117 DIV 20000 37776 / 877777 = 40000 REM = 77776 PS = 0  
:\*\*\*\*\*

010002	010701			SCOPE					
010004	012704	020000		MOV	820000,x4				:TEST OF DIVIDE
010010	012705	037776		MOV	837776,x4+1				:LOAD HIGH ORDER WITH 20000
010014	071427	077777		DIV	877777,x4				:LOAD LOW ORDER WITH 37776
010020	013767	177776	001574	MOV	38PS,PSW				:DIVIDE BY 877777
									:SAVE PS
010026	122767	000000	001566	CHPB	80,PSW				:IS PS = 0
010034	001401			BEQ	+.4				:PS IS WRONG
010036	000000			HLT					
010040	022704	040000		CHPB	840000,x4				:IS QUOTIENT = 40000
010044	001401			BEQ	+.4				:QUOTIENT IS WRONG
010046	000000			HLT					
010050	022705	077776		CHPB	877776,x4+1				:IS REMAINDER = 77776
010054	001401			BEQ	+.4				:REMAINDER IS WRONG
010056	000000			HLT					

\*\*\*\*\*  
:TEST 120 DIV 177777 77777 / 8177776 = 40000 REM = 177777 PS = 0  
:\*\*\*\*\*

010060	010701			SCOPE					
010062	012704	177777		MOV	8177777,x4				:TEST OF DIVIDE
010066	012705	077777		MOV	877777,x4+1				:LOAD HIGH ORDER WITH 177777
010072	071427	177776		DIV	8177776,x4				:LOAD LOW ORDER WITH 77777
010076	013767	177776	001516	MOV	38PS,PSW				:DIVIDE BY 8177776
									:SAVE PS
010104	122767	000000	001510	CHPB	80,PSW				:IS PS = 0
010112	001401			BEQ	+.4				:PS IS WRONG
010114	000000			HLT					
010116	022704	040000		CHPB	840000,x4				:IS QUOTIENT = 40000
010122	001401			BEQ	+.4				:QUOTIENT IS WRONG
010124	000000			HLT					
010126	022705	177777		CHPB	8177777,x4+1				:IS REMAINDER = 177777
010132	001401			BEQ	+.4				:REMAINDER IS WRONG
010134	000000			HLT					

```

:*****
:TEST 121 DIV 157777 100001 / 0100000 = 40000 REM = 100001 PS = 0
:*****
    
```

010136	010701			SCOPE		:TEST OF DIVIDE
010140	012704	157777		MOV	0157777,x4	:LOAD HIGH ORDER WITH 157777
010144	012705	100001		MOV	0100001,x4+1	:LOAD LOW ORDER WITH 100001
010150	071427	100000		DIV	0100000,x4	:DIVIDE BY 0100000
010154	013767	177776	001440	MOV	00PS,PSW	:SAVE PS
010162	122767	000000	001432	CMPB	00,PSW	:IS PS = 0
010170	001401			BEG	+.4	
010172	000000			HLT		:PS IS WRONG
010174	022704	040000		CMP	040000,x4	:IS QUOTIENT = 40000
010200	001401			BEG	+.4	
010202	000000			HLT		:QUOTIENT IS WRONG
010204	022705	100001		CMP	0100001,x4+1	:IS REMAINDER = 100001
010210	001401			BEG	+.4	
010212	000000			HLT		:REMAINDER IS WRONG

```

:*****
:TEST 122 DIV 0 52525 / 052525 = 1 REM = 0 PS = 0
:*****
    
```

010214	010701			SCOPE		:TEST OF DIVIDE
010216	012704	000000		MOV	00,x4	:LOAD HIGH ORDER WITH 0
010222	012705	052525		MOV	052525,x4+1	:LOAD LOW ORDER WITH 52525
010226	071427	052525		DIV	052525,x4	:DIVIDE BY 052525
010232	013767	177776	001362	MOV	00PS,PSW	:SAVE PS
010240	122767	000000	001354	CMPB	00,PSW	:IS PS = 0
010246	001401			BEG	+.4	
010250	000000			HLT		:PS IS WRONG
010252	022704	000001		CMP	01,x4	:IS QUOTIENT = 1
010256	001401			BEG	+.4	
010260	000000			HLT		:QUOTIENT IS WRONG
010262	022705	000000		CMP	00,x4+1	:IS REMAINDER = 0
010266	001401			BEG	+.4	
010270	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 123 DIV 0 52524 / #52525 = 0 REM = 52524 PS = 4  
\*\*\*\*\*

010272	010701			SCOPE		:TEST OF DIVIDE
010274	012704	000000		MOV	#0, X4	:LOAD HIGH ORDER WITH 0
010300	012705	052524		MOV	#52524, X4+1	:LOAD LOW ORDER WITH 52524
010304	071427	052525		DIV	#52525, X4	:DIVIDE BY #52525
010310	013767	177776	001304	MOV	2#PS, PSM	:SAVE PS
010316	122767	000004	001276	CMPB	#4, PSM	:IS PS = 4
010324	001401			BEQ	+.4	
010326	000000			HLT		:PS IS WRONG
010330	022704	000000		CMP	#0, X4	:IS QUOTIENT = 0
010334	001401			BEQ	+.4	
010336	000000			HLT		:QUOTIENT IS WRONG
010340	022705	052524		CMP	#52524, X4+1	:IS REMAINDER = 52524
010344	001401			BEQ	+.4	
010346	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 124 DIV 0 0 / #125252 = 0 REM = 0 PS = 4  
\*\*\*\*\*

010350	010701			SCOPE		:TEST OF DIVIDE
010352	012704	000000		MOV	#0, X4	:LOAD HIGH ORDER WITH 0
010356	012705	000000		MOV	#0, X4+1	:LOAD LOW ORDER WITH 0
010362	071427	125252		DIV	#125252, X4	:DIVIDE BY #125252
010366	013767	177776	001226	MOV	2#PS, PSM	:SAVE PS
010374	122767	000004	001220	CMPB	#4, PSM	:IS PS = 4
010402	001401			BEQ	+.4	
010404	000000			HLT		:PS IS WRONG
010406	022704	000000		CMP	#0, X4	:IS QUOTIENT = 0
010412	001401			BEQ	+.4	
010414	000000			HLT		:QUOTIENT IS WRONG
010416	022705	000000		CMP	#0, X4+1	:IS REMAINDER = 0
010422	001401			BEQ	+.4	
010424	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 125 DIV 177614 66560 / #40342 = 177070 REM = 0 PS = 10  
\*\*\*\*\*

010426	010701			SCOPE		:TEST OF DIVIDE
010430	012704	177614		MOV	#177614,x4	:LOAD HIGH ORDER WITH 177614
010434	012705	066560		MOV	#66560,x4+1	:LOAD LOW ORDER WITH 66560
010440	071427	040342		DIV	#40342,x4	:DIVIDE BY #40342
010444	013767	177776	001150	MOV	2#PS,PSW	:SAVE PS
010452	122767	000010	001142	CMPB	#10,PSW	:IS PS = 10
010460	001401			BEQ	+.4	
010462	000000			HLT		:PS IS WRONG
010464	022704	177070		CMP	#177070,x4	:IS QUOTIENT = 177070
010470	001401			BEQ	+.4	
010472	000000			HLT		:QUOTIENT IS WRONG
010474	022705	000000		CMP	#0,x4+1	:IS REMAINDER = 0
010500	001401			BEQ	+.4	
010502	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 126 DIV 0 77777 / #0 = DUMMY REM = DUMMY PS = 3  
\*\*\*\*\*

010504	010701			SCOPE		:TEST OF DIVIDE
010506	012704	000000		MOV	#0,x4	:LOAD HIGH ORDER WITH 0
010512	012705	077777		MOV	#77777,x4+1	:LOAD LOW ORDER WITH 77777
010516	071427	000000		DIV	#0,x4	:DIVIDE BY #0
010522	013767	177776	001072	MOV	2#PS,PSW	:SAVE PS
010530	042767	000014	001064	BIC	#14,PSW	
010536	122767	000003	001056	CMPB	#3,PSW	:IS PS = 3
010544	001401			BEQ	+.4	
010546	000000			HLT		:PS IS WRONG

\*\*\*\*\*  
:TEST 127 DIV 77777 177777 / #2 = DUMMY REM = DUMMY PS = 2  
\*\*\*\*\*

010550	010701			SCOPE		:TEST OF DIVIDE
010552	012704	077777		MOV	#77777,%4	:LOAD HIGH ORDER WITH 77777
010556	012705	177777		MOV	#177777,%4+1	:LOAD LOW ORDER WITH 177777
010562	071427	000002		DIV	#2,%4	:DIVIDE BY #2
010566	013767	177776	001026	MOV	2#PS,PSW	:SAVE PS
010574	042767	000014	001020	BIC	#14,PSW	
010602	122767	000002	001012	CMPB	#2,PSW	;IS PS = 2
010610	001401			BEQ	+.4	
010612	00LJ00			HLT		;PS IS WRONG
010614	012702	000002		MOV	#2,%2	
010620	012703	011626		MOV	#51,%3	
010624	012704	011630		MOV	#52,%4	

\*\*\*\*\*  
:TEST 130 DIV 0 52525 / S1 = 25252 REM = 1 PS = 0  
\*\*\*\*\*

010630	010701			SCOPE		:TEST OF DIVIDE
010632	012700	000000		MOV	#0,%0	:LOAD HIGH ORDER WITH 0
010636	012701	052525		MOV	#52525,%0+1	:LOAD LOW ORDER WITH 52525
010642	071067	000760		DIV	S1,%0	:DIVIDE BY S1
010646	013767	177776	000746	MOV	2#PS,PSW	:SAVE PS
010654	122767	000000	000740	CMPB	#0,PSW	;IS PS = 0
010662	001401			BEQ	+.4	
010664	000000			HLT		;PS IS WRONG
010666	022700	025252		CMP	#25252,%0	;IS QUOTIENT = 25252
010672	001401			BEQ	+.4	
010674	000000			HLT		;QUOTIENT IS WRONG
010676	022701	000001		CMP	#1,%0+1	;IS REMAINDER = 1
010702	001401			BEQ	+.4	
010704	000000			HLT		;REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 131 DIV 0 52525 / 252 = 25252 REM = 1 PS = 0  
\*\*\*\*\*

010706	010701			SCOPE		:TEST OF DIVIDE
010710	012700	000000		MOV	#0,%0	:LOAD HIGH ORDER WITH 0
010714	012701	052525		MOV	#52525,%0+1	:LOAD LOW ORDER WITH 52525
010720	071077	000704		DIV	252,%0	:DIVIDE BY 252
010724	013767	177776	000670	MOV	2#PS,PSW	:SAVE PS
010732	122767	000000	000662	CMPB	#0,PSW	:IS PS = 0
010740	001401			BEQ	+.4	
010742	000000			HLT		:PS IS WRONG
010744	022700	025252		CMP	#25252,%0	:IS QUOTIENT = 25252
010750	001401			BEQ	+.4	
010752	000000			HLT		:QUOTIENT IS WRONG
010754	022701	000001		CMP	#1,%0+1	:IS REMAINDER = 1
010760	001401			BEQ	+.4	
010762	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 132 DIV 0 52525 / 251 = 25252 REM = 1 PS = 0  
\*\*\*\*\*

010764	010701			SCOPE		:TEST OF DIVIDE
010766	012700	000000		MOV	#0,%0	:LOAD HIGH ORDER WITH 0
010772	012701	052525		MOV	#52525,%0+1	:LOAD LOW ORDER WITH 52525
010776	071037	011626		DIV	251,%0	:DIVIDE BY 251
011002	013767	177776	000612	MOV	2#PS,PSW	:SAVE PS
011010	122767	000000	000604	CMPB	#0,PSW	:IS PS = 0
011016	001401			BEQ	+.4	
011020	000000			HLT		:PS IS WRONG
011022	022700	025252		CMP	#25252,%0	:IS QUOTIENT = 25252
011026	001401			BEQ	+.4	
011030	000000			HLT		:QUOTIENT IS WRONG
011032	022701	000001		CMP	#1,%0+1	:IS REMAINDER = 1
011036	001401			BEQ	+.4	
011040	000000			HLT		:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 133 DIV 0 52525 / %2 = 25252 REM = 1 PS = 0  
\*\*\*\*\*

011042	010701			SCOPE		:TEST OF DIVIDE
011044	012700	000000		MOV	#0,%0	:LOAD HIGH ORDER WITH 0
011050	012701	052525		MOV	#52525,%0+1	:LOAD LOW ORDER WITH 52525
011054	071002			DIV	%2,%0	:DIVIDE BY %2
011056	013767	177776	000536	MOV	3#PS,PSW	:SAVE PS
011064	122767	000000	000530	CMPB	#0,PSW	:IS PS = 0
011072	001401			BEQ	+.4	:PS IS WRONG
011074	000000			HLT		
011076	022700	025252		CMP	#25252,%0	:IS QUOTIENT = 25252
011102	001401			BEQ	+.4	:QUOTIENT IS WRONG
011104	000000			HLT		
011106	022701	000001		CMP	#1,%0+1	:IS REMAINDER = 1
011112	001401			BEQ	+.4	:REMAINDER IS WRONG
011114	000000			HLT		

\*\*\*\*\*  
:TEST 134 DIV 0 52525 / (3)+ = 25252 REM = 1 PS = 0  
\*\*\*\*\*

011116	010701			SCOPE		:TEST OF DIVIDE
011120	012700	000000		MOV	#0,%0	:LOAD HIGH ORDER WITH 0
011124	012701	052525		MOV	#52525,%0+1	:LOAD LOW ORDER WITH 52525
011130	071023			DIV	(3)+,%0	:DIVIDE BY (3)+
011132	013767	177776	000462	MOV	3#PS,PSW	:SAVE PS
011140	122767	000000	000454	CMPB	#0,PSW	:IS PS = 0
011146	001401			BEQ	+.4	:PS IS WRONG
011150	000000			HLT		
011152	022700	025252		CMP	#25252,%0	:IS QUOTIENT = 25252
011156	001401			BEQ	+.4	:QUOTIENT IS WRONG
011160	000000			HLT		
011162	022701	000001		CMP	#1,%0+1	:IS REMAINDER = 1
011166	001401			BEQ	+.4	:REMAINDER IS WRONG
011170	000000			HLT		

\*\*\*\*\*  
:TEST 135 DIV 0 52525 / -(3) = 25252 REM = 1 PS = 0  
:\*\*\*\*\*

Address	Instruction	Hex	Hex	Scope	Comment
011172	010701			SCOPE	:TEST OF DIVIDE
011174	012700	000000		MOV #0,%0	:LOAD HIGH ORDER WITH 0
011200	012701	052525		MOV #52525,%0+1	:LOAD LOW ORDER WITH 52525
011204	071043			DIV -(3),%0	:DIVIDE BY -(3)
011206	013767	177776	000406	MOV @PS,PSW	:SAVE PS
011214	122767	000000	000400	CMPB #0,PSW	:IS PS = 0
011222	001401			BEQ .+4	
011224	000000			HLT	:PS IS WRONG
011226	022700	025252		CMP #25252,%0	:IS QUOTIENT = 25252
011232	001401			BEQ .+4	
011234	000000			HLT	:QUOTIENT IS WRONG
011236	022701	000001		CMP #1,%0+1	:IS REMAINDER = 1
011242	001401			BEQ .+4	
011244	000000			HLT	:REMAINDER IS WRONG

\*\*\*\*\*  
:TEST 136 DIV 0 52525 / 2(4) = 25252 REM = 1 PS = 0  
:\*\*\*\*\*

Address	Instruction	Hex	Hex	Scope	Comment
011246	010701			SCOPE	:TEST OF DIVIDE
011250	012700	000000		MOV #0,%0	:LOAD HIGH ORDER WITH 0
011254	012701	052525		MOV #52525,%0+1	:LOAD LOW ORDER WITH 52525
011260	071064	000002		DIV 2(4),%0	:DIVIDE BY 2(4)
011264	013767	177776	000330	MOV @PS,PSW	:SAVE PS
011272	122767	000000	000322	CMPB #0,PSW	:IS PS = 0
011300	001401			BEQ .+4	
011302	000000			HLT	:PS IS WRONG
011304	022700	025252		CMP #25252,%0	:IS QUOTIENT = 25252
011310	001401			BEQ .+4	
011312	000000			HLT	:QUOTIENT IS WRONG
011314	022701	000001		CMP #1,%0+1	:IS REMAINDER = 1
011320	001401			BEQ .+4	
011322	000000			HLT	:REMAINDER IS WRONG

\*\*\*\*\*  
: TEST 137 DIV 0 52525 / 2(4) = 25252 REM = 1 PS = 0  
: \*\*\*\*\*

011324	010701			SCOPE					
011326	012700	000000		MOV	#0,%0				;TEST OF DIVIDE
011332	012701	052525		MOV	#52525,%0+1				;LOAD HIGH ORDER WITH 0
011336	071074	000000		DIV	2(4),%0				;LOAD LOW ORDER WITH 52525
011342	013767	177776	000252	MOV	2#PS,PSW				;DIVIDE BY 2(4)
									;SAVE PS
011350	122767	000000	000244	CMPB	#0,PSW				;IS PS = 0
011356	001401			BEQ	+.4				;PS IS WRONG
011360	000000			HLT					
011362	022700	025252		CMP	#25252,%0				;IS QUOTIENT = 25252
011366	001401			BEQ	+.4				;QUOTIENT IS WRONG
011370	000000			HLT					
011372	022701	000001		CMP	#1,%0+1				;IS REMAINDER = 1
011376	001401			BEQ	+.4				;REMAINDER IS WRONG
011400	000000			HLT					

\*\*\*\*\*  
: TEST 140 DIV 0 52525 / 2(4)+ = 25252 REM = 1 PS = 0  
: \*\*\*\*\*

011402	010701			SCOPE					
011404	012700	000000		MOV	#0,%0				;TEST OF DIVIDE
011410	012701	052525		MOV	#52525,%0+1				;LOAD HIGH ORDER WITH 0
011414	071034			DIV	2(4)+,%0				;LOAD LOW ORDER WITH 52525
011416	013767	177776	000176	MOV	2#PS,PSW				;DIVIDE BY 2(4)+
									;SAVE PS
011424	122767	000000	000170	CMPB	#0,PSW				;IS PS = 0
011432	001401			BEQ	+.4				;PS IS WRONG
011434	000000			HLT					
011436	022700	025252		CMP	#25252,%0				;IS QUOTIENT = 25252
011442	001401			BEQ	+.4				;QUOTIENT IS WRONG
011444	000000			HLT					
011446	022701	000001		CMP	#1,%0+1				;IS REMAINDER = 1
011452	001401			BEQ	+.4				;REMAINDER IS WRONG
011454	000000			HLT					

```

:*****
:TEST 141 DIV 0 52525 / 2-(4) = 25252 REM = 1 PS = 0
:*****
    
```

011456	010701			SCOPE					
011460	012700	000000		MOV	#0,%0				:TEST OF DIVIDE
011464	012701	052525		MOV	#52525,%0+1				:LOAD HIGH ORDER WITH 0
011470	071054			DIV	2-(4),%0				:LOAD LOW ORDER WITH 52525
011472	013767	177776	000122	MOV	2#PS,PSW				:DIVIDE BY 2-(4)
									:SAVE PS
011500	122767	000000	000114	CHPB	#0,PSW				:IS PS = 0
011506	001401			BEG	+.4				
011510	000000			HLT					:PS IS WRONG
011512	022700	025252		CHP	#25252,%0				:IS QUOTIENT = 25252
011516	001401			BEG	+.4				
011520	000000			HLT					:QUOTIENT IS WRONG
011522	022701	000001		CHP	#1,%0+1				:IS REMAINDER = 1
011526	001401			BEG	+.4				
011530	000000			HLT					:REMAINDER IS WRONG
011532	005267	167242		INC	ICNT				
011536	016737	167236	177570	MOV	ICNT,2#DISPLAY				
011544	022767	020000	167226	CHP	#20000,ICNT				
011552	001402			BEG	+.6				
011554	000167	167222		JMP	BEG				
011560	005067	167214		CLR	ICNT				
011564	105737	177564		TSTB	2#177564				
011570	100375			BPL	-.4				
011572	112737	000007	177566	MOVB	#7,2#177566				
011600	013700	000042		MOV	2#42,%0				:GET MONITOR RETURN ADDRESS
011604	001404			BEG	1\$				:SKIP IF NONE
011606	004710			JSR	7,(0)				:GO BACK TO THE MONITOR
011610	000240			NOP					
011612	000240			NOP					
011614	000240			NOP					
011616	000137	000200		JMP	2#200				:RESTART THE PROGRAM
011622	000000			PSW:	0				
011624	177776			S0:	2				
011626	000002			S1:	2				
011630	011626			S2:	1				
011632	000002			S3:	2				
	000001								
				.END					





SDIV	1368	150	173	196	219	242	265	288	311	334	357	380	403	426	449
	472	495	518	541	564	587	610	633	656	679	702	725	748	771	794
	803	826	849	872	895	918	941	964	987	1010	1033	1056	1079	1102	1125
	1148	1171	1194	1217	1240	1263	1286	1309	1332	1355	1378	1401	1424	1447	1470
	1479	1502	1525	1548	1571	1594	1617	1640	1663	1686	1709	1732	1755	1778	1801
	1824	1847	1870	1893	1916	1939	1962	1985	2008	2031	2054	2077	2093	2113	2136
	2159	2182	2205	2228	2251	2274	2297	2320							

REQ	BIC	BIT	BPL	CLR	CP	CMPB	DIV	HQ	INC	JMP	JSR	MOV																					
144	780	143	2351	142	164	329	1051	1396	1608	1773	1953	2154	2334	160	505	836	1181	1512	1857	2192	157	502	833	1178	1509	1854	2189	124	2344	137	2355	141	248
147	796	146	2349	168	348	513	1070	1415	1612	1792	1957	2173	2338	183	528	859	1204	1535	1880	2215	180	525	856	1201	1532	1877	2212	125	2348	137	2355	145	250
161	1433	187	187	352	697	909	1074	1419	1631	1796	1976	2177	2346	206	551	882	1227	1558	1903	2238	203	548	879	1224	1555	1900	2235	2359	155	270			
165	1449	191	371	536	716	913	1093	1470	1635	1815	1980	2196	229	574	905	1250	1581	1926	2261	226	571	902	1247	1578	1923	2258	271	156	271				
169	2086	210	375	555	720	932	1097	1474	1654	1819	1999	2200	252	597	928	1273	1604	1949	2284	249	594	925	1270	1601	1946	2281	178	158	273				
184	2102	214	394	559	739	936	1116	1493	1658	1838	2003	2219	275	620	951	1296	1627	1972	2307	272	617	948	1293	1624	1969	2304	178	178	293				
188	2312	233	398	578	743	955	1120	1497	1677	1843	2022	2223	298	643	974	1319	1650	1995	2330	295	640	971	1316	1647	1992	2327	179	179	294				
198	2316	237	417	582	752	959	1139	1504	1681	1861	2026	2242	321	666	997	1342	1673	2018	318	663	994	1339	1670	2015	181	181	296	181	296				
207	2331	256	421	601	766	978	1143	1520	1700	1865	2045	2246	344	689	1020	1365	1696	2041	341	686	1017	1362	1693	2038	201	201	316	201	316				
211	2335	260	440	605	770	982	1153	1539	1704	1884	2049	2265	367	712	1043	1388	1719	2064	364	709	1040	1385	1716	2051	202	202	317	202	317				
215	2339	279	444	624	782	986	1166	1546	1723	1898	2068	2269	390	735	1066	1411	1742	2088	387	732	1063	1408	1739	2084	204	204	319	204	319				
230	2347	283	463	628	786	990	1185	1550	1727	1907	2072	2288	413	758	1089	1435	1765	2104	410	755	1086	1431	1762	2100	224	224	339	224	339				
234	2354	302	467	647	800	1024	1189	1369	1566	1746	1911	2127	436	782	1112	1451	1788	2123	433	778	1109	1447	1785	2120	225	225	340	225	340				
238	2247	306	486	651	803	1028	1208	1373	1585	1750	1930	2131	459	798	1135	1466	1811	2146	456	794	1132	1463	1808	2143	227	227	342	227	342				
253	2262	325	490	670	867	1047	1212	1392	1589	1769	1934	2150	482	813	1158	1489	1834	2169	479	810	1155	1486	1831	2166	247	247	362	247	362				

	363	365	385	386	388	402	409	411	431	432	434	454	455	457	477
	478	480	500	501	503	508	519	526	546	547	549	554	570	572	592
	593	595	615	616	618	633	639	641	661	662	664	684	685	687	707
	699	710	730	731	733	748	754	756	776	777	779	804	805	807	808
	809	811	831	832	834	854	855	857	877	878	880	900	901	903	923
	894	896	916	917	919	939	940	942	961	962	964	984	985	987	988
	1039	1041	1061	1062	1064	1084	1085	1087	1107	1108	1110	1015	1016	1018	1038
	1154	1156	1176	1177	1179	1199	1200	1202	1222	1223	1225	1245	1246	1248	1268
	1269	1271	1291	1292	1294	1314	1315	1317	1337	1338	1340	1360	1361	1363	1383
	1384	1386	1406	1407	1409	1429	1430	1432	1445	1446	1448	1461	1462	1464	1484
	1485	1487	1507	1508	1510	1530	1531	1533	1553	1554	1556	1576	1577	1579	1599
	1600	1602	1622	1623	1625	1645	1646	1648	1668	1669	1671	1691	1692	1694	1714
	1715	1717	1737	1738	1740	1760	1761	1763	1783	1784	1786	1806	1807	1809	1829
	1830	1832	1852	1853	1855	1875	1876	1878	1898	1899	1901	1921	1922	1924	1944
	1945	1947	1967	1968	1970	1990	1991	1993	2013	2014	2016	2036	2037	2039	2059
	2060	2062	2082	2083	2085	2098	2099	2101	2109	2110	2111	2136	2137	2139	2141
	2142	2144	2164	2165	2167	2187	2188	2190	2210	2211	2213	2233	2234	2236	2256
	2257	2259	2279	2280	2282	2302	2303	2305	2325	2326	2328	2345	2353		
MOV8	148	2352	2358												
NOP	2356	2357													
TSTB	2350														
.ENABL	121														
.END	2367														
.ENDC	159	172	182	195	205	218	228	241	251	264	274	287	297	310	320
	333	343	356	366	379	389	402	412	425	435	448	458	471	481	494
	504	517	527	540	550	553	573	586	596	609	619	630	643	655	665
	678	688	698	711	720	732	747	757	770	781	786	797	802	812	825
	835	848	858	871	881	894	904	917	927	940	950	963	973	986	996
	1009	1019	1032	1042	1051	1065	1078	1088	1101	1111	1124	1134	1147	1157	1170
	1180	1193	1203	1216	1226	1239	1249	1262	1272	1285	1295	1308	1318	1331	1341
	1354	1364	1377	1387	1397	1410	1423	1434	1439	1450	1455	1465	1478	1488	1501
	1511	1524	1534	1547	1557	1570	1580	1593	1603	1616	1625	1639	1649	1662	1672
	1685	1695	1708	1718	1731	1741	1754	1764	1777	1787	1800	1810	1823	1833	1846
	1856	1869	1879	1892	1902	1915	1925	1938	1948	1961	1971	1984	1994	2007	2017
	2030	2040	2053	2063	2076	2087	2092	2103	2108	2122	2135	2145	2158	2168	2181
.IFNZ	2191	2204	2214	2227	2237	2250	2260	2273	2283	2296	2306	2319	2329	2342	2181
	159	182	205	228	251	274	297	320	343	366	389	412	435	458	481
	504	527	550	573	596	619	642	665	688	711	734	757	780	803	812
	835	858	881	904	927	950	973	996	1019	1042	1065	1088	1111	1134	1157
	1180	1203	1226	1249	1272	1295	1318	1341	1364	1387	1410	1433	1449	1465	1488
	1511	1534	1557	1580	1603	1626	1649	1672	1695	1718	1741	1764	1787	1810	1833
	1856	1879	1902	1925	1948	1971	1994	2017	2040	2063	2086	2102	2122	2145	2168
.IFZ	2191	2214	2237	2260	2283	2306	2329	2352	2375	2398	2421	2444	2467	2490	2513
	164	187	210	233	256	279	302	325	348	371	394	417	440	463	486
	509	532	555	578	601	624	647	670	693	715	739	762	786	802	817
	840	863	886	909	932	955	978	1001	1024	1047	1070	1093	1116	1139	1162
	1185	1208	1231	1254	1277	1300	1323	1346	1369	1392	1415	1439	1455	1470	1493
	1516	1539	1563	1585	1608	1631	1654	1677	1700	1723	1746	1769	1792	1815	1838
	1861	1884	1907	1930	1953	1976	1999	2022	2045	2068	2092	2108	2127	2150	2173
.IIF	2196	2219	2242	2265	2288	2311	2334	2357	2380	2403	2426	2449	2472	2495	2518
	150	173	196	219	242	265	288	311	334	357	380	403	426	449	472
	495	518	541	564	587	610	633	656	679	702	725	748	771	797	803
	826	849	872	895	918	941	964	987	1010	1033	1056	1079	1102	1125	1148
	1171	1194	1217	1240	1263	1286	1309	1332	1355	1378	1401	1424	1440	1456	1479
	1502	1525	1548	1571	1594	1617	1640	1663	1686	1709	1732	1755	1778	1801	1824
	1847	1870	1893	1916	1939	1962	1985	2008	2031	2054	2077	2093	2113	2136	2159

.LIST	2182 117 472 803 1148 1479 1824 2159	2205 124 495 826 1171 1502 1847 2182	2228 173 518 849 1194 1525 1870 2205	2251 196 541 872 1217 1548 1893 2228	2274 219 564 895 1240 1571 1916 2251	2297 242 587 918 1263 1594 1939 2274	2320 265 610 941 1286 1617 1962 2297	288 633 964 1309 1640 1985 2320	311 656 987 1332 1663 2008 2343	334 679 1010 1355 1686 2031	357 702 1033 1378 1709 2054	380 725 1056 1401 1732 2077	403 748 1079 1424 1755 2093	426 771 1102 1440 1778 2109	449 787 1125 1456 1801 2136
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.PAGE	150 826 1502 2182	196 872 1548 2228	242 918 1594 2274	288 964 1640 2320	334 1010 1686 2320	380 1056 1732 2320	426 1102 1778 2320	472 1148 1824 2320	518 1194 1870 2343	564 1240 1916 2343	610 1286 1962 2343	656 1332 2008 2343	702 1378 2054 2343	748 1424 2093 2343	787 1456 2136 2343
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DEFAULT GLOBALS GENERATED: 0

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RUN-TIME RATIO: 320/33=9.6  
CORE USED: 6K (12 PAGES)

