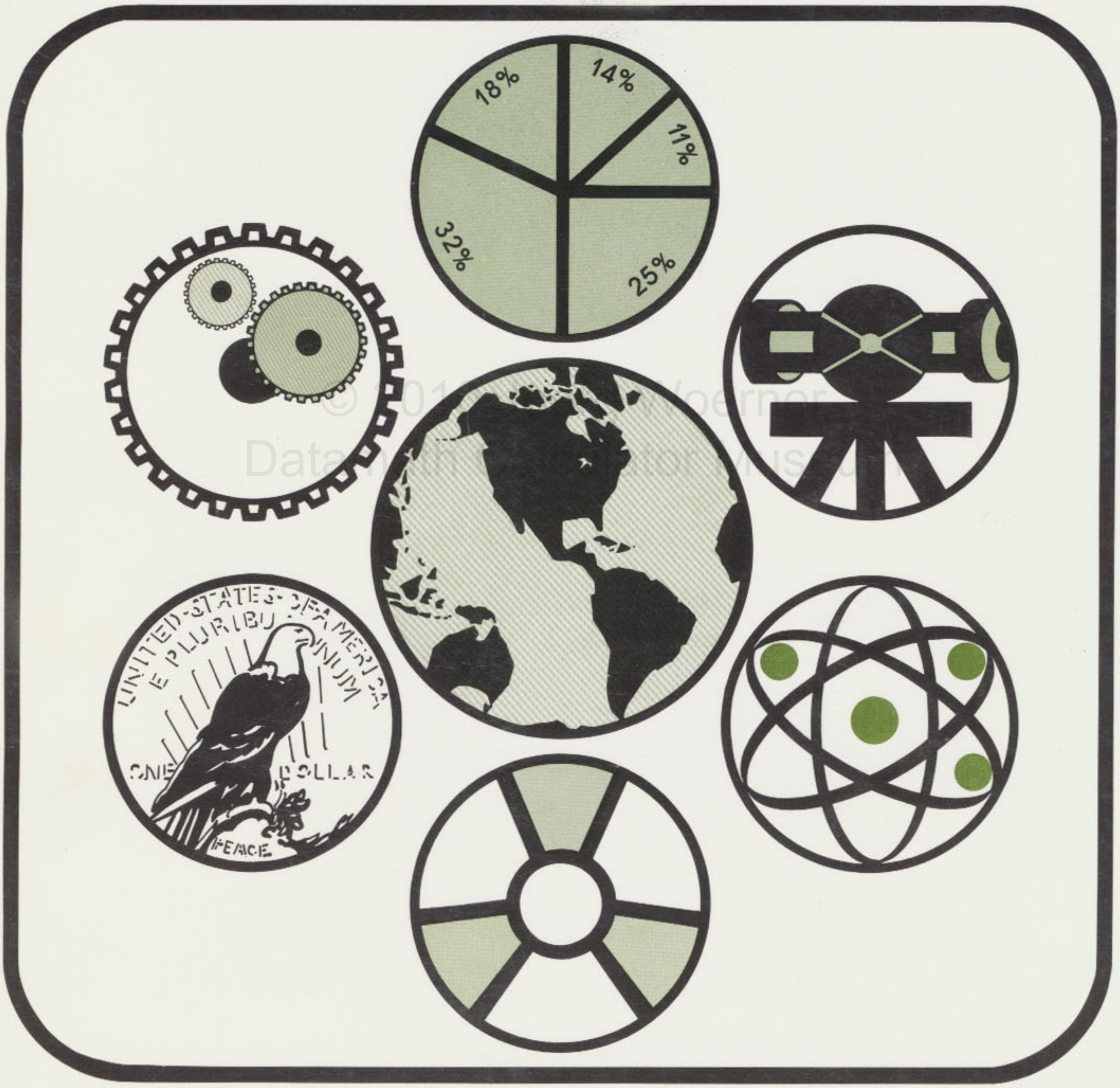
Programmable TI59 Specialty Pakettes
Printer Utility



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THE TI-59 PAKETTE STORY

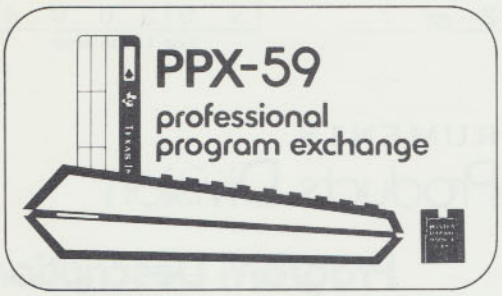
Since the early days of handheld programmable calculators, Texas Instruments (TI) has been deeply involved in supplying not only calculators with exceptional power but also programs (software) to match. Many experts were put to work within their special fields of endeavor to design quality Software Libraries for TI calculator users. Among the Libraries produced by TI for the TI-59 are:

- Statistics
- Real Estate and Investment
- Surveying
- Navigation
- Aviation
- Leisure
- Business Decisions
- Securities Analysis

Fully recognizing TI-59 users may require programs other than those included in TI-59 Libraries, a second program source was developed. This source, the Professional Program Exchange, gathers, compiles and redistributes programs **written by TI-59 users** who defined their own specific program needs and filled these needs by writing programs. These programs, now in Pakettes, add a new dimension to the software made available to TI-59 user. Combining some of the best TI originated programs with the most popular programs found in the Professional Program Exchange, Program Pakettes offer a true software value. Current TI Pakette offerings include:

- Securities
- Statistical Testing
- Civil Engineering
- Electronic Engineering
- Blackbody
- Oil/Gas/Energy
- Printer Utility
- Astrology
- Programming Aids
- 59 Fun
- 3-D Graphics
- Fluid Dynamics
- Mathematics
- Lab Chemistry
- Production Planning
- Marketing/Sales

Table of Contents



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Calculator Products Division

Submission Abstract

Program Title	Rev.
ALPHA PRINTING CLOCK	

Abstract of Program

Prints hours and minutes at 1 minute intervals. i.e., "Twelve seventeen, twelve eighteen..." etc. Can be calibrated to allow for calculator differences. PC100A required. Accurate to within 1 minute in 12 hours.

User Benefits:

Demonstrates capabilities of TI-59 with print cradle.

Category Name Utility	Required Progs.	Prog. Steps 371	Card Sides 2	PC-100A Needed ☑ Library Module ID ☐

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Submission Checklist

- ☒ Recorded Magnetic Cards
- ☒ Submission Abstract
- ☒ Program Description
- ☒ User Instructions
- ☒ Sample Problem
- ☒ Listing
- ☐ _____
- ☐ _____

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Program Description

Program Title: ALPHA PRINTING CLOCK	Rev.

Method, Equations, Sketches, Limitations, References, Error Recovery:

Timing is controlled by the Loop "LBL A NOP DSZ O A". The value of Reg. 00 is the number of iterations the DSZ Loop performs before going to the printing routine. Variation of the initial value of the Reg. 00, will change the total cycle time through the Loop. Cycle time varies from calculator to calculator, with temperature and humidity. The average value for Register 00 (the "Calibration Seed') was found to be 324. To determine the proper calibration seed for your calculator make several sample timings using 324 as the seed. If the clock runs slow decrease the value of the seed, if fast, increase the value. To change the cycle time type the new calibration seed and press 'D'. The old value will be displayed.

Printing is performed by recalling, from various registers, number codes that correspond to the time digits and loading these codes into op's 1 through 4. Op 5 is then executed and the time is printed out. Register 00 is reinitialized and the cycle is repeated.

No sample problem is included in this program. See user instructions for directions.

☐ See Continuation Sheet

90 | 8,0,0,4

PPX-59
professional program exchange

User Instructions

Program Title
ALPHA PRINTING CLOCK

Start	Set Time		Cali. Seed	

Partition (OP 17): 479 , 59
Parenthesis Levels: 3
t Register ☑
Angular Mode (if applicable):
SBR Levels: 0
Absolute Addresses ☑
Library Module ID:
Disturbs Pending Operations ☑

LABELS (Op 08)

INV	ln x	CE	CLR	x:t	x²
√x	1/x	STO	RCL	SUM	y^x
EE	(	)	÷	GTO	X
SBR	−	RST	+	R/S	•
+/−	=	CLR	INV	log	CP
tan	Pgm	P→R	sin	cos	CMs
Exc	Prd	|x|	Eng	Fix	Int
Deg	Pause	x=t	Nop	Op	Rad
Lbl	x≠t	Σ+	x̄	Grad	St flg
If flg	D.MS	π	List	Write	Osz
Adv	Prt				

USER DEFINED KEYS

A	Start Clock
B	Set Time
C	
D	Enter Calibra. Seed
E	
A'	
B'	
C'	
D'	
E'	Used

FLAGS	X 0	X 1	2	3	4	5	6	7	8	9

STEP	PROCEDURE	ENTER	PRESS	OUTPUT/MODE (see legend below)
1	Enter Program (Sides 1 & 2 Optional 3 & 4)			
2	Load Alphanumeric Codes in Registers	See Continuation Sheet		
3	To Set Time	HH.MM	B	HH.MM
4	To Change Calibration Seed	New Seed	D	Old Seed
5	To Start Clock		A	

Modes: (n)•—Printed only (n)—Displayed Briefly (Pause)
n•—Printed and displayed

☑ See Continuation Sheet

DATA REGISTERS (INV List)

0	
1	All used except
2	
3	22, 34, 35, 44, 45
4	47, 48, 52, 53, 54,
5	55, 58
6	
7	
8	
9	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

Continued From: ☐ Program Description ☒ User Instructions ☐ Stmt. of Example

Program Title: ALPHA PRINTING CLOCK	Rev.

Register Contents: Load Alpha Codes (below) into corresponding registers.

Value	Register	Value	Register
323117.	01	3723.	30
374332.	02	2435374500.	31
3723351717.	03	3100000000.	32
21324135.	04	1700000000.	33
21244217.	05	17.	36
362444.	06	37.	37
3617421731.	07	2717421731.	38
1724222337.	08	4317274217.	39
31243117.	09	2132.	40
371731.	10	3537450000.	41
1727174217.	11		
3743172742.	12	2124	50
372324.	13	2137450000.	51
213241.	14		
2124.	15		
3624.	16		
36174217.	17		
172422.	18		
312431.	19		
3743.	20		
1731374500.	21		
3537171731.	23		
3537171731.	24		
2137171731.	25		
4437171731.	26		
3137171731.	27		
2337171731.	28		
1737171731.	29		

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LOC	CODE	KEY	COMMENTS
000	76	LBL	
001	11	A	
002	68	NOP	
003	97	DSZ	
004	00	00	
005	11	A	
006	43	RCL	
007	43	43	
008	75	-	
009	06	6	
010	00	0	
011	95	=	
012	22	INV	
013	67	EQ	
014	00	00	
015	38	38	
016	01	1	
017	44	SUM	
018	42	42	
019	00	0	
020	42	STO	
021	43	43	
022	43	RCL	
023	42	42	
024	75	-	
025	01	1	
026	03	3	
027	95	=	
028	22	INV	
029	67	EQ	
030	00	00	
031	38	38	
032	01	1	
033	42	STO	
034	42	42	
035	00	0	
036	42	STO	
037	43	43	
038	22	INV	
039	86	STF	
040	00	00	
041	22	INV	
042	86	STF	
043	01	01	
044	22	INV	
045	58	FIX	
046	29	CP	
047	53	(	
048	43	RCL	
049	42	42	
050	75	-	
051	01	1	
052	01	1	
053	54	)	
054	77	GE	

LOC	CODE	KEY	COMMENTS
055	01	01	
056	99	99	
057	43	RCL	
058	42	42	
059	42	STO	
060	59	59	
061	73	RC*	
062	59	59	
063	87	IFF	
064	00	00	
065	00	00	
066	72	72	
067	69	OP	
068	01	01	
069	61	GTO	
070	00	00	
071	77	77	
072	69	OP	
073	04	04	
074	61	GTO	
075	02	02	
076	47	47	
077	53	(	
078	43	RCL	
079	43	43	
080	75	-	
081	01	1	
082	01	1	
083	54	)	
084	77	GE	
085	00	00	
086	96	96	
087	43	RCL	
088	43	43	
089	42	STO	
090	59	59	
091	86	STF	
092	00	00	
093	61	GTO	
094	00	00	
095	61	61	
096	43	RCL	
097	43	43	
098	32	X↔T	
099	01	1	
100	02	2	
101	22	INV	
102	77	GE	
103	01	01	
104	10	10	
105	86	STF	
106	01	01	
107	61	GTO	
108	02	02	
109	21	21	

LOC	CODE	KEY	COMMENTS
110	29	CP	
111	53	(	
112	43	RCL	
113	43	43	
114	75	-	
115	02	2	
116	00	0	
117	54	)	
118	77	GE	
119	01	01	
120	41	41	
121	53	(	
122	43	RCL	
123	43	43	
124	85	+	
125	01	1	
126	00	0	
127	54	)	
128	42	STO	
129	57	57	
130	73	RC*	
131	43	43	
132	69	OP	
133	03	03	
134	73	RC*	
135	57	57	
136	69	OP	
137	04	04	
138	61	GTO	
139	02	02	
140	47	47	
141	53	(	
142	53	(	
143	43	RCL	
144	43	43	
145	55	÷	
146	01	1	
147	00	0	
148	54	)	
149	59	INT	
150	65	×	
151	01	1	
152	00	0	
153	54	)	
154	42	STO	
155	56	56	
156	53	(	
157	53	(	
158	43	RCL	
159	43	43	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

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9,0 8,0,0,4
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LOC	CODE	KEY	COMMENTS
160	55	÷	
161	01	1	
162	00	0	
163	54	)	
164	22	INV	
165	59	INT	
166	65	×	
167	01	1	
168	00	0	
169	54	)	
170	42	STO	
171	59	59	
172	86	STF	
173	00	00	
174	53	(	
175	73	RC*	
176	56	56	
177	85	+	
178	43	RCL	
179	45	45	
180	54	)	
181	69	OP	
182	02	02	
183	01	1	
184	44	SUM	
185	56	56	
186	73	RC*	
187	56	56	
188	69	OP	
189	03	03	
190	43	RCL	
191	59	59	
192	22	INV	
193	67	EQ	
194	00	00	
195	61	61	
196	61	GTO	
197	02	02	
198	47	47	
199	73	RC*	
200	42	42	
201	69	OP	
202	01	01	
203	53	(	
204	43	RCL	
205	42	42	
206	85	+	
207	02	2	
208	01	1	
209	54	)	
210	42	STO	
211	56	56	
212	73	RC*	
213	56	56	
214	69	OP	
215	02	02	
216	42	STO	
217	45	45	
218	61	GTO	
219	00	00	
220	77	77	
221	53	(	
222	43	RCL	
223	43	43	
224	85	+	
225	02	2	
226	05	5	
227	54	)	
228	42	STO	
229	56	56	
230	53	(	
231	43	RCL	
232	43	43	
233	85	+	
234	02	2	
235	07	7	
236	54	)	
237	42	STO	
238	57	57	
239	73	RC*	
240	56	56	
241	69	OP	
242	03	03	
243	73	RC*	
244	57	57	
245	69	OP	
246	04	04	
247	69	OP	
248	05	05	
249	69	OP	
250	00	00	
251	43	RCL	
252	49	49	
253	42	STO	
254	00	00	
255	00	0	
256	42	STO	
257	45	45	
258	01	1	
259	44	SUM	
260	43	43	
261	53	(	
262	43	RCL	
263	42	42	
264	85	+	
265	53	(	
266	53	(	
267	43	RCL	
268	43	43	
269	75	-	
270	01	1	
271	54	)	
272	55	÷	
273	01	1	
274	00	0	
275	00	0	
276	54	)	
277	54	)	
278	58	FIX	
279	02	02	
280	11	A	
281	76	LBL	
282	12	B	
283	85	+	
284	93	.	
285	00	0	
286	01	1	
287	95	=	
288	42	STO	
289	46	46	
290	29	CP	
291	22	INV	
292	77	GE	
293	10	E'	
294	43	RCL	
295	46	46	
296	59	INT	
297	75	-	
298	01	1	
299	03	3	
300	95	=	
301	77	GE	
302	10	E'	
303	43	RCL	
304	46	46	
305	22	INV	
306	59	INT	
307	65	×	
308	01	1	
309	00	0	
310	00	0	
311	75	-	
312	06	6	
313	00	0	
314	95	=	
315	77	GE	
316	10	E'	
317	43	RCL	
318	46	46	
319	59	INT	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

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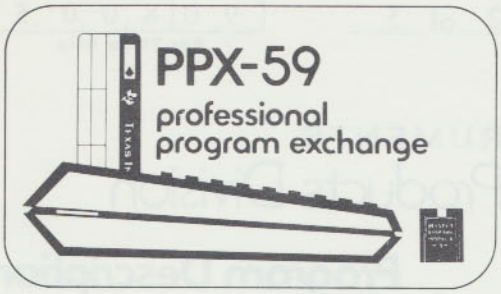
LOC	CODE	KEY	COMMENTS	LOC	CODE	KEY	COMMENTS	LOC	CODE	KEY	COMMENTS
320	42	STO									
321	42	42									
322	43	RCL									
323	46	46									
324	22	INV									
325	59	INT									
326	65	×									
327	01	1									
328	00	0									
329	00	0									
330	95	=									
331	42	STO									
332	43	43									
333	43	RCL									
334	46	46									
335	75	-									
336	93	.									
337	00	0									
338	01	1									
339	95	=									
340	91	R/S									
341	76	LBL									
342	14	D									
343	42	STO									
344	00	00									
345	48	EXC									
346	49	49									
347	91	R/S									
348	76	LBL									
349	10	E'									
350	69	OP									
351	00	00									
352	04	4									
353	03	3									
354	02	2									
355	03	3									
356	01	1									
357	03	3									
358	03	3									
359	07	7									
360	07	7									
361	01	1									
362	69	OP									
363	02	02									
364	69	OP									
365	05	05									
366	69	OP									
367	00	00									
368	00	0									
369	95	=									
370	91	R/S									

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR



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Submission Abstract

Program Title FLAG TESTER	Rev.

Abstract of Program

Checks the settings of the ten flags and displays those flags that are set.

User Benefits:

Handy for debugging a program which involves heavy flag usage.

Category Name Utility	Required Progs.	Prog. Steps 47	Card Sides 1	PC-100A Needed ☐ Library Module ID ☐

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- ☒ Submission Abstract
- ☒ Program Description
- ☒ User Instructions
- ☒ Sample Problem
- ☒ Listing
- ☐ _____
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Program Description

Program Title: FLAG TESTER	Rev.

Method, Equations, Sketches, Limitations, References, Error Recovery:

Program checks to see if a flag is set, if the flag is set, the number of the flag is multiplied by the appropriate power of 10 and summed into a register. After all of the flags have been tested, the register containing the summed results of the set flags is displayed.

To check if a flag is not set insert an "INV" before location 016.

The registers used are not important, therefore the user can change the registers around to suit his particular need.

Also the labels may be changed to fit the user's needs.

☐ See Continuation Sheet

9 0 8 0 0 5

PPX-59
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User Instructions

Program Title FLAG TESTER

Entry

Partition (OP 17) 479 , 59

Angular Mode (if applicable)

Library Module ID

Parenthesis Levels

SBR Levels

t Register ☐

Absolute Addresses ☐

Disturbs Pending Operations ☑

LABELS (Op 08)

INV	ln x	CE	CLR	x⇄t	x^2
$\sqrt{x}$	$1/x$	STO	RCL	SUM	y^x
EE	(	)	÷	GTO	×
SBR	−	RST	+	R/S	•
+/−	=	CLR	INV	log	CP
tan	Pgm	P→R	sin	cos	CMs
Exc	Prd	|x|	Eng	Fix	Int
Deg	Pause	x=t	Nop	Op	✓ Rad
Lbl	x≠t	Σ+	$\bar{x}$	Grad	St flg ✓
If flg ✓	D.MS	π	List	Write	Dsz
Adv	Prt				

USER DEFINED KEYS

A
B
C
D
E
A'
B'
C'
D'
E' Entry to Program

FLAGS	0	1	2	3	4	5	6	7	8	9

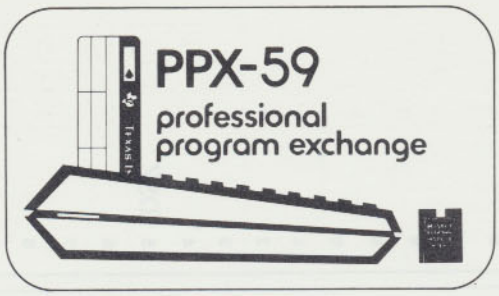
STEP	PROCEDURE	ENTER	PRESS	OUTPUT/MODE (see legend below)
1	Enter Program			
2	Start Test Say, for instance 654 is displayed. then the program found that flags 6, 5 and 4 were set. If flags are set the display will be in fix 2 mode. Set flags are to the left of the decimal point.		E'	ABCDEFGHIJ

Modes: (n)•—Printed only (n)—Displayed Briefly (Pause)
n•—Printed and displayed

☐ See Continuation Sheet

DATA REGISTERS (INV List)

0	
1	Powers of 10
2	Sum into flg
3	to be tested
4	
5	
6	
7	
8	
9	
0	
1	
2	
3	
4	
55	DSZ
6	
7	
8	
9	



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Sample Problem

Statement of Example

Check to see which flags are set. (We'll set Flags 4, 7, 8 and 3)

☐ See Continuation Sheet

ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT
	St Flg 4	0.	
	St Flg 7	0.	
	St Flg 8	0.	
	St Flg 3	0.	
	E'	8743.00	
		The program found flags 8, 7, 4 and 3 to be set.	

Modes: (n)•—Printed only (n)—Displayed Briefly (Pause)
n•—Printed and displayed

☐ Over

PPX-59 Professional Program Exchange

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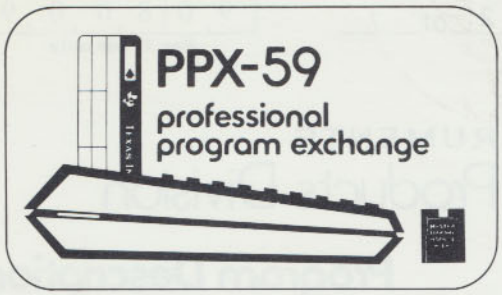
LOC	CODE	KEY	COMMENTS
000	76	LBL	
001	10	E'	
002	22	INV	
003	58	FIX	
004	00	0	
005	42	STO	
006	02	02	
007	42	STO	
008	03	03	
009	01	1	
010	42	STO	
011	01	01	
012	01	1	
013	00	0	
014	42	STO	
015	55	55	
016	76	LBL	
017	86	STF	
018	87	IFF	
019	40	IND	
020	03	03	
021	87	IFF	
022	76	LBL	
023	69	OP	
024	01	1	
025	44	SUM	
026	03	03	
027	97	DSZ	
028	55	55	Analyst note:
029	86	STF	To get the "55" code key in "÷"
030	43	RCL	
031	02	02	
032	92	RTN	
033	76	LBL	
034	87	IFF	
035	43	RCL	
036	03	03	
037	65	×	
038	43	RCL	
039	01	01	
040	95	=	
041	44	SUM	
042	02	02	
043	01	1	
044	00	0	
045	49	PRD	
046	01	01	
047	58	FIX	
048	02	02	
049	61	GTO	
050	69	OP	

LOC	CODE	KEY	COMMENTS

LOC	CODE	KEY	COMMENTS

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR



9 0 8 0 0 9
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TEXAS INSTRUMENTS
Calculator Products Division

Submission Abstract

Program Title	Rev.
CARTESIAN GRAPH	

Abstract of Program

This program graphs ordered pairs of the form X.Y providing X and Y are both positive integers between 1 and 9 inclusive. 20 ordered pairs can be graphed.

Run time: approximately 5 minutes

User Benefits:

Provides graphic representation of 1st quadrant ordered pairs. Also demonstrates graphic capability of TI-59.

Category Name Utility	Required Progs.	Prog. Steps 288	Card Sides 2	PC-100A Needed ☐ Library Module ID ☐

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Submission Checklist

- ☒ Recorded Magnetic Cards
- ☒ Submission Abstract
- ☒ Program Description
- ☒ User Instructions
- ☒ Sample Problem
- ☒ Listing
- ☐ _____
- ☐ _____

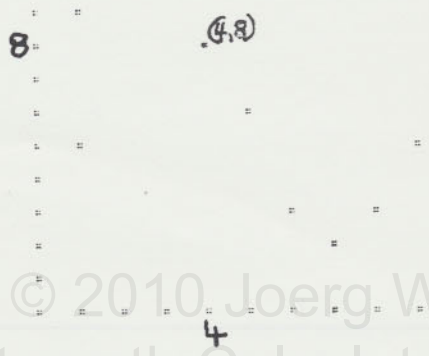
TEXAS INSTRUMENTS
Calculator Products Division

Program Description

Program Title: CARTESIAN GRAPH	Rev.

Method, Equations, Sketches, Limitations, References, Error Recovery:

Up to 20 Data Points of the Format X.Y may be input, stored and plotted at one time. The output appears as follows:



The range of values for X and Y are limited to positive integers from 1 to 9 inclusive. If the same point is entered more than once a period will not be plotted in that position. Care should be taken to avoid this since an incorrect representation will result.

The data prints are stored in Registers 1-20.

☐ See Continuation Sheet

PPX-59
professional program exchange

User Instructions

Program Title CARTESIAN GRAPH

Plot		Input X.Y		

Partition (OP 17): 479 . 59
Parenthesis Levels: 1
Angular Mode (if applicable):
SBR Levels:
Library Module ID:
t Register ☐
Absolute Addresses ☑
Disturbs Pending Operations ☑

LABELS (Op 08)

INV	ln x	CE	CLR	x:t	x²
√x	1/x	STO	RCL	SUM	y^x
EE	(	)	÷	GTO	×
SBR	−	RST	+	R/S	•
+/−	=	CLR	INV	log	CP
tan	Pgm	P→R	sin	cos	CMs
Exc	Prd	|x|	Eng	Fix	Int
Deg	Pause	x=t	Nop	Op	Rad
Lbl	x=1	Σ+	x̄	Grad	St Flg
If flg	D.MS	π	List	Write	Dsz
Adv	Prt				

USER DEFINED KEYS

A	Plot
B	
C	Input X.Y
D	
E	
A'	
B'	
C'	
D'	
E'	

FLAGS Reinit?	Data Full 1	2	3	4	5	6	7	8	9

STEP	PROCEDURE	ENTER	PRESS	OUTPUT/MODE (see legend below)
1	Load Sides A & B			
1a	To load alpha Codes	4000000000	STO 31	
		40000000	STO 32	
		400000	STO 33	
		4000	STO 34	
		40	STO 35	
		40004000	STO 48	
		4000400040	STO 49	
		4000000000	STO 50	
2	Enter Data Point in the Format X.Y X and Y must be positive Integers from 1 to 9 inclusive		C	1. (Number of register to be filled next)
		X.Y,	C	
		X.Y,	C	2. Flashing 9's
		X_{20} Y_{20}	C	
	To enter new data press RESET C To set the register counter to 1.		CLR	
3	To plot graph Program takes about 5 minutes to plot		A	

Modes: (n)•—Printed only (n)—Displayed Briefly (Pause)
n•—Printed and displayed

DATA REGISTERS (INV List)

0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
9	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

☐ See Continuation Sheet

TEXAS INSTRUMENTS
Calculator Products Division

Sample Problem

Statement of Example

Plot the points (3,3), (3,4), 3,5), (4,3), (5,3), (4,5), (5,5) and (5,4)

☐ See Continuation Sheet

ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT
Card Sides A & B			
4000000000	STO 31		STORE ALPHA CODES
40000000	STO 32		
400000	STO 33		
4000	STO 34		
40	STO 35		
40004000	STO 48		
4000400040	STO 49		
4000000000	STO 50		
	RSET C	1	
3.3	C	2	
3.4	C	3	
3.5	C	4	INPUT POINTS
4.3	C	5	
5.3	C	6	
4.5	C	7	
5.5	C	8	
5.4	C	9	
	A		PLOT

Modes: (n)•—Printed only (n)—Displayed Briefly (Pause)
n•—Printed and displayed

☐ Over

PPX-59 Professional Program Exchange
Sample Problem (cont'd)

9,0|8,0,0,9
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ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT

Modes: (n)* —Printed only (n)—Displayed Briefly (Pause)
n*—Printed and displayed

PPX-59 Professional Program Exchange

9,0 8,0 0,9
For TI use only

LOC	CODE	KEY	COMMENTS
000	76	LBL	
001	13	C	
002	87	IFF	
003	01	01	
004	88	DMS	
005	87	IFF	
006	00	00	
007	68	NOP	
008	86	STF	
009	00	00	
010	00	0	
011	42	STO	
012	00	00	
013	76	LBL	
014	68	NOP	
015	72	ST*	
016	00	00	
017	43	RCL	
018	00	00	
019	75	-	
020	02	2	
021	00	0	
022	95	=	
023	77	GE	
024	88	DMS	
025	01	1	
026	44	SUM	
027	00	00	
028	43	RCL	
029	00	00	
030	91	R/S	
031	76	LBL	
032	88	DMS	
033	86	STF	
034	01	01	
035	00	0	
036	35	1/X	
037	95	=	
038	91	R/S	
039	76	LBL	
040	11	A	
041	09	9	
042	42	STO	
043	00	00	
044	01	1	
045	42	STO	
046	58	58	
047	73	RC*	
048	58	58	
049	53	(	
050	22	INV	
051	59	INT	
052	65	×	
053	01	1	
054	00	0	
055	75	-	
056	43	RCL	
057	00	00	
058	54	)	
059	67	EQ	
060	01	01	
061	33	33	
062	01	1	
063	44	SUM	
064	58	58	
065	53	(	
066	43	RCL	
067	58	58	
068	75	-	
069	02	2	
070	01	1	
071	54	)	
072	77	GE	
073	00	00	
074	78	78	
075	61	GTO	
076	00	00	
077	47	47	
078	43	RCL	
079	50	50	
080	44	SUM	
081	51	51	
082	43	RCL	
083	51	51	
084	69	OP	
085	01	01	
086	43	RCL	
087	52	52	
088	69	OP	
089	02	02	
090	43	RCL	
091	53	53	
092	69	OP	
093	03	03	
094	43	RCL	
095	54	54	
096	69	OP	
097	04	04	
098	69	OP	
099	05	05	
100	69	OP	
101	00	00	
102	00	0	
103	42	STO	
104	51	51	
105	42	STO	
106	52	52	
107	42	STO	
108	53	53	
109	42	STO	
110	54	54	
111	97	DSZ	
112	00	00	
113	00	00	
114	44	44	
115	29	CP	
116	43	RCL	
117	49	49	
118	69	OP	
119	01	01	
120	69	OP	
121	03	03	
122	43	RCL	
123	48	48	
124	69	OP	
125	02	02	
126	69	OP	
127	04	04	
128	69	OP	
129	05	05	
130	69	OP	
131	00	00	
132	91	R/S	
133	73	RC*	
134	58	58	
135	59	INT	
136	42	STO	
137	56	56	
138	53	(	
139	24	CE	
140	75	-	
141	03	3	
142	54	)	
143	22	INV	
144	77	GE	
145	01	01	
146	70	70	
147	53	(	
148	43	RCL	
149	56	56	
150	75	-	
151	05	5	
152	54	)	
153	22	INV	
154	77	GE	
155	01	01	
156	93	93	
157	53	(	
158	43	RCL	
159	56	56	
160	75	-	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

PPX-59 Professional Program Exchange

9 0 8 0 0 9
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LOC	CODE	KEY	COMMENTS
161	08	8	
162	54	)	
163	22	INV	
164	77	GE	
165	02	02	
166	16	16	
167	61	GTO	
168	02	02	
169	55	55	
170	53	(	
171	43	RCL	
172	56	56	
173	75	-	
174	01	1	
175	54	)	
176	67	EQ	
177	01	01	
178	86	86	
179	43	RCL	
180	35	35	
181	44	SUM	
182	51	51	
183	61	GTO	
184	00	00	
185	62	62	
186	43	RCL	
187	33	33	
188	44	SUM	
189	51	51	
190	61	GTO	
191	00	00	
192	62	62	
193	53	(	
194	43	RCL	
195	56	56	
196	75	-	
197	03	3	
198	54	)	
199	67	EQ	
200	02	02	
201	09	09	
202	43	RCL	
203	34	34	
204	44	SUM	
205	52	52	
206	61	GTO	
207	00	00	
208	62	62	
209	43	RCL	
210	32	32	
211	44	SUM	
212	52	52	
213	61	GTO	
214	00	00	
215	62	62	
216	53	(	
217	43	RCL	
218	56	56	
219	75	-	
220	07	7	
221	54	)	
222	67	EQ	
223	02	02	
224	48	48	
225	53	(	
226	43	RCL	
227	56	56	
228	75	-	
229	06	6	
230	54	)	
231	67	EQ	
232	02	02	
233	41	41	
234	43	RCL	
235	31	31	
236	44	SUM	
237	53	53	
238	61	GTO	
239	00	00	
240	62	62	
241	43	RCL	
242	33	33	
243	44	SUM	
244	53	53	
245	61	GTO	
246	00	00	
247	62	62	
248	43	RCL	
249	35	35	
250	44	SUM	
251	53	53	
252	61	GTO	
253	00	00	
254	62	62	
255	53	(	
256	43	RCL	
257	56	56	
258	75	-	
259	08	8	
260	54	)	
261	67	EQ	
262	02	02	
263	81	81	
264	53	(	
265	43	RCL	
266	56	56	
267	75	-	
268	09	9	
269	54	)	
270	22	INV	
271	67	EQ	
272	00	00	
273	62	62	
274	43	RCL	
275	34	34	
276	44	SUM	
277	54	54	
278	61	GTO	
279	00	00	
280	62	62	
281	43	RCL	
282	32	32	
283	44	SUM	
284	54	54	
285	61	GTO	
286	00	00	
287	62	62	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc. Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

9 0 8 0 1 2
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professional
program exchange

TEXAS INSTRUMENTS
Calculator Products Division

Submission Abstract

Program Title	Rev.
FUNCTION PLOTTER FOR TI-59/PC100A	

Abstract of Program

This program plots a user defined function over a specified interval of the independent variable. The plotted points are single asterisks. 20 print positions are possible.

User Benefits:

Provides a quick way of looking at function behavior over a given interval.

Category Name Utility	Required Progs.	Prog. Steps 230	Card Sides 1	PC-100A Needed ☑ Library Module ID ☐

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Signature _____ Date _____

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City _____ State _____ Zip _____

Submission Checklist

- ☒ Recorded Magnetic Cards
- ☒ Submission Abstract
- ☒ Program Description
- ☒ User Instructions
- ☒ Sample Problem
- ☒ Listing
- ☐ _____
- ☐ _____

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TEXAS INSTRUMENTS
Calculator Products Division

Program Description

Program Title: FUNCTION PLOTTER FOR TI-59/PC100A	Rev.

Method, Equations, Sketches, Limitations, References, Error Recovery:

This program produces a plot which, when turned sideways, appears as a series of asterisks plotted in print positions 0-19, corresponding to F(x) for each X.

The user enters the function in learn mode (See Sample Problem or User Instructions).

To start 'Program, Press 2nd E'. The input variables will be requested by prompting. The input variables are:

Xo = Initial Value of function argument.

Δ X = Increment for function argument.

Ymin = Function value at left side of print paper

Ymax = Function value at right side of print paper

N(x) = Number of points to plot.

Press R/S after each # is input. After each set of N(x) plotted points, N(x) will be requested again and plotting may be resumed.

☐ See Continuation Sheet

9,0 | 8,0,1,2

PPX-59
professional program exchange

User Instructions

Program Title Function Plotter for TI-59/PC100A

f(x)				Start

Partition (OP 17): 479 , 59

Parenthesis Levels: 1

t Register: ☑

Angular Mode (if applicable):

SBR Levels: 1

Absolute Addresses: ☐

Library Module ID:

Disturbs Pending Operations: ☑

LABELS (Op 08)

INV		ln x		CE		CLR		x:t		x²	
√x		1/x		STO	✓	RCL	✓	SUM	✓	y^x	✓
EE		(| |)		÷		GTO		×	
SBR		−	✓	RST		+		R/S		•	
+/−		=		CLR		INV		log		CP	
tan		Pgm		P→R		sin		cos		CMs	
Exc		Prd		Σx		Eng		Fix		Int	
Deg		Pause		x=t		Nop		Op		Rad	
Lbl		x≥t		Σ+		x̄		Grad		St flg	
If flg		D.MS		π		Lst		Write		Dsz	✓
Adv		Prt	✓								

USER DEFINED KEYS

A	
B	
C	
D	
E	Used
A'	Function
B'	
C'	Used
D'	Used
E'	Start Program

FLAGS	0	1	2	3	4	5	6	7	8	9

STEP	PROCEDURE	ENTER	PRESS			OUTPUT/MODE (see legend below)
1	Enter Program (Sides 1 & 2)					
2	Enter Function		GTO	*A'	LRN	
	Begin subroutine by storing x.					
	Begin and end function with parenthesis.					PRINTED ONLY (0 DISPLAYED)
	Last step should be a 'RTN'					
3	Enter Calculate mode				LRN	
4	To start Program			*E'		XO =
	Enter 1st X	X		R/S		0. XO
	Enter ΔX	Δ x		R/S		Δ X =
	Enter Ymin	Ymin		R/S		0. ΔX
	Enter Y max	Ymax		R/S		Ymin =
	Enter Number of Points	N(x)		R/S		0. Ymin
						Ymax =
	POINTS PLOTTED					0. Ymax
						N(X) +
	Enter additional number of points	N(x)		R/S		N(X) =

Modes: (n)•—Printed only (n)—Displayed Briefly (Pause)
n•—Printed and displayed

DATA REGISTERS (INV Lst)

0	
1	Xo
2	Δ x
3	
4	Ymin
5	Ymax
6	Working
7	Working
8	
9	SBR Working Reg.
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

☐ See Continuation Sheet

9 0 8 0 1 2
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TEXAS INSTRUMENTS
Calculator Products Division

Sample Problem

Statement of Example

Plot the function $F(x) = x^2 - 5x$ at .5 increments with the minimum $f(x) = -5$ and the maximum being 10. $Xo = -2$ and $N(x) = 25$.

☐ See Continuation Sheet

ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT
	GTO A' LRN STO 9 (RCL 9 X^2 - 5 X RCL 9) INV SBR LRN *E'		ENTER f(x)
-2	R/S	XO = -2. XO	
.5	R/S	X = 0.5 X	
-5	R/S	Ymin = -5. Ymin	
10	R/S	Ymax = 10. Ymax	
25	R/S	N(X) =	

Modes: (n)* —Printed only (n)—Displayed Briefly (Pause)
n* —Printed and displayed

☒ Over

PPX-59 Professional Program Exchange
Sample Problem (cont'd)

9,0 | 8,0,1,2
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ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT
			

N(X) =

Modes: (n)* —Printed only (n)—Displayed Briefly (Pause)
n*—Printed and displayed

PPX-59 Professional Program Exchange

9,0 | 8,0 | 1,2
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LOC	CODE	KEY	COMMENTS
000	76	LBL	
001	99	PRT	
002	32	X:T	
003	69	□P	
004	00	00	
005	43	RCL	
006	04	04	
007	77	GE	
008	75	-	
009	43	RCL	
010	05	05	
011	22	INV	
012	77	GE	
013	85	+	
014	01	1	
015	09	9	
016	65	×	
017	53	(	
018	32	X:T	
019	75	-	
020	43	RCL	
021	04	04	
022	54	)	
023	55	÷	
024	43	RCL	
025	06	06	
026	95	=	
027	59	INT	
028	69	□P	
029	07	07	
030	92	RTN	
031	76	LBL	
032	75	-	
033	02	2	
034	52	EE	
035	09	9	
036	22	INV	
037	52	EE	
038	69	□P	
039	01	01	
040	69	□P	
041	05	05	
042	92	RTN	
043	76	LBL	
044	85	+	
045	04	4	
046	07	7	
047	69	□P	
048	04	04	
049	69	□P	
050	05	05	
051	92	RTN	
052	76	LBL	
053	42	STO	
054	42	STO	
055	01	01	
056	04	4	
057	04	4	
058	00	0	
059	01	1	
060	00	0	
061	00	0	
062	00	0	
063	00	0	
064	69	□P	
065	04	04	
066	43	RCL	
067	01	01	
068	69	□P	
069	06	06	
070	92	RTN	
071	76	LBL	
072	43	RCL	
073	42	STO	
074	02	02	
075	07	7	
076	05	5	
077	04	4	
078	04	4	
079	69	□P	
080	04	04	
081	43	RCL	
082	02	02	
083	69	□P	
084	06	06	
085	92	RTN	
086	76	LBL	
087	44	SUM	
088	42	STO	
089	04	04	
090	04	4	
091	05	5	
092	03	3	
093	00	0	
094	02	2	
095	04	4	
096	03	3	
097	01	1	
098	69	□P	
099	04	04	
100	43	RCL	
101	04	04	
102	69	□P	
103	06	06	
104	92	RTN	
105	76	LBL	
106	45	Y×	
107	42	STO	
108	05	05	
109	04	4	
110	05	5	
111	03	3	
112	00	0	
113	01	1	
114	03	3	
115	04	4	
116	04	4	
117	69	□P	
118	04	04	
119	43	RCL	
120	05	05	
121	69	□P	
122	06	06	
123	92	RTN	
124	76	LBL	
125	15	E	
126	42	STO	
127	00	00	
128	43	RCL	
129	05	05	
130	75	-	
131	43	RCL	
132	04	04	
133	95	=	
134	42	STO	
135	06	06	
136	76	LBL	
137	97	DSZ	
138	43	RCL	
139	01	01	
140	16	A'	
141	71	SBR	
142	99	PRT	
143	43	RCL	
144	02	02	
145	44	SUM	
146	01	01	
147	97	DSZ	
148	00	00	
149	97	DSZ	
150	92	RTN	
151	76	LBL	
152	10	E'	
153	04	4	
154	04	4	
155	00	0	
156	01	1	
157	06	6	
158	04	4	
159	18	C'	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

PPX-59 Professional Program Exchange

9 0 8 0 1 2
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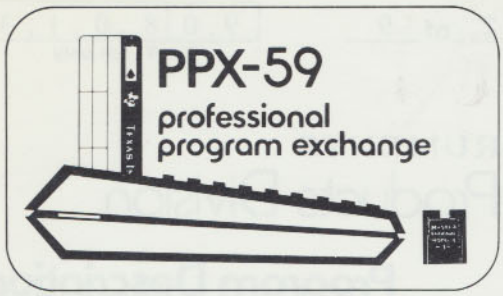
LOC	CODE	KEY	COMMENTS
160	92	RTN	
161	71	SBR	
162	42	STO	
163	07	7	
164	05	5	
165	04	4	
166	04	4	
167	06	6	
168	04	4	
169	18	C'	
170	92	RTN	
171	71	SBR	
172	43	RCL	
173	04	4	
174	05	5	
175	03	3	
176	00	0	
177	02	2	
178	04	4	
179	03	3	
180	01	1	
181	06	6	
182	04	4	
183	18	C'	
184	92	RTN	
185	71	SBR	
186	44	SUM	
187	04	4	
188	05	5	
189	03	3	
190	00	0	
191	01	1	
192	03	3	
193	04	4	
194	04	4	
195	06	6	
196	04	4	
197	18	C'	
198	92	RTN	
199	71	SBR	
200	45	Y×	
201	76	LBL	
202	19	D'	
203	03	3	
204	01	1	
205	05	5	
206	05	5	
207	04	4	
208	04	4	
209	05	5	
210	06	6	
211	06	6	
212	04	4	
213	18	C'	
214	92	RTN	

LOC	CODE	KEY	COMMENTS
215	15	E	
216	61	GTO	
217	19	D'	
218	76	LBL	
219	18	C'	
220	69	OP	
221	00	00	
222	69	OP	
223	01	01	
224	69	OP	
225	05	05	
226	25	CLR	
227	92	RTN	
228	76	LBL	
229	16	A'	
230	42	STO	
231	09	09	
232	53	(	
233	43	RCL	
234	09	09	
235	33	X²	
236	75	-	
237	05	5	
238	65	×	
239	43	RCL	
240	09	09	
241	54	)	
242	92	RTN	

LOC	CODE	KEY	COMMENTS

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR



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TEXAS INSTRUMENTS
Calculator Products Division

Submission Abstract

Program Title	Rev.
BAR GRAPH PLOTTER	

Abstract of Program

Plots the values contained in Registers 1-20 in Bar Graph Format. The maximum value can be set by the user or the graph can be scaled automatically to the largest value in Registers 1-20. The maximum value is printed following the plot. 15 print positions are available with a 5 digit descriptor.

User Benefits:

Provides a quick way of plotting a bar graph resulting in Time and Labor Cost Savings.

Category Name Utility	Required Progs.	Prog. Steps 417	Card Sides 2	PC-100A Needed ☑ Library Module ID ☐

Submittal Agreement

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Signature _____ Date _____

Name Texas Instruments Tel. No. _____

Address _____

City _____ State _____ Zip _____

Submission Checklist

- ☒ Recorded Magnetic Cards
- ☒ Submission Abstract
- ☒ Program Description
- ☒ User Instructions
- ☒ Sample Problem
- ☒ Listing
- ☐ _____
- ☐ _____

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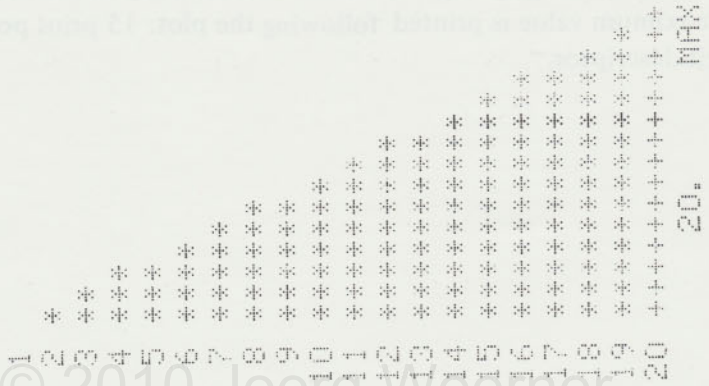
TEXAS INSTRUMENTS
Calculator Products Division

Program Description

Program Title: BAR GRAPH PLOTTER	Rev.

Method, Equations, Sketches, Limitations, References, Error Recovery:

The bar graph appears as follows when the printer tape is turned sideways with print position 19 at the top:



The above graph shows the points 1-20. Each point is stored in a register, recalled and plotted. To store a set of points in registers 1-20, each number is entered and the user defined key C is pressed. The number in the display is the number of the register into which the next number will be stored. After 20 registers have been filled, the display will flash 9's indicating the registers are full. If C is pressed again, attempting to store another number, 9's will flash. RST must be pressed to allow new data to be stored. Changes in the registers may be made in the usual way of recalling/storing.

The codes for the alpha numerics must be stored into the appropriate registers prior to the execution of the program. (See User Instructions). As a result any of the alphanumerics can be used in the graph depending on individual preference.

Scaling of the graph is accomplished by pressing A to set the maximum to the largest value contained in registers 1-20, or by entering the value of the maximum and pressing B.

The plot itself is broken into 2 fields; numeric descriptor field and the bar graph field. The numeric field can display numbers from .1 to 9999.9. Since the field is only 5 characters wide, the last digit of the field is taken as the fractional part of the number, eliminating the need for a decimal point. Hence, there exists an implied decimal point between print positions 3 and 4 of the print out's 0-19 print positions. When a number greater than 9999.9 is plotted, "++" will be printed in the numeric field rather than the number and +'s will fill the bar graph field.

XXSee Continuation Sheet

Continued From: ☒ Program Description ☐ User Instructions ☐ Stmt. of Example

Program Title: BAR GRAPH PLOTTER	Rev.

The bar graph field occupies the remaining 5-19 print positions. When a number greater than or equal to the maximum end of the scale is plotted, +'s will fill the bar graph field and the number will be printed in the numeric field.

Following the plot of the values in registers 1-20 the maximum end of the scale is printed and labeled "max". i.e.

40. Max

EXAMPLE OUTPUT

Register	Contents	Numeric Field	Bar Graph Field
1	20	20	*******
2	29	29	**********
3	40	40	++++++++++++++++
4	10,000	++	++++++++++++++++
5	10.5	105	****

NOTE: The minimum value of the graph is always taken to be zero.

9,0 | 8,0,1,3

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User Instructions

Program Title BAR GRAPH PLOTTER

Largest X = max	x = max	Enter x	Plot	

Partition (OP 17): 479 . 59

Parenthesis Levels: 2

t Register ☐

Angular Mode (if applicable):

SBR Levels: 1

Absolute Addresses ☐

Library Module ID:

Disturbs Pending Operations ☑

LABELS (Op 08)

INV	ln x	CE	CLR	x:t	x²	
√x	1/x	STO ✓	RCL	SUM	y^x	
EE	(	)	÷ ✓	GTO	X	✓
SBR	− ✓	RST	+ ✓	R/S ✓	•	
+/−	=	CLR	INV	log	CP ✓	
tan ✓	Pgm	P→R	sin ✓	cos ✓	CMs	
Exc	Prd ✓	|x|	Eng ✓	Fix	Int ✓	
Deg	Pause	x=t ✓	Nop ✓	Op	Rad	
Lbl	x≠t	Σ+ ✓	x̄ ✓	Grad	St flg ✓	
If flg	D.MS ✓	π ✓	List	Write	Dsz	
Adv ✓	Prt ✓					

USER DEFINED KEYS

A	Set max. to Largest X
B	Set max. = To X
C	Enter X
D	Plot
E	
A'	
B'	
C'	
D'	
E'	

FLAGS Init. 0 | Registers Full 1 | 2 | 3 | Suppress Leading Zeros 4 | 5 | 6 | 7 | 8 | 9

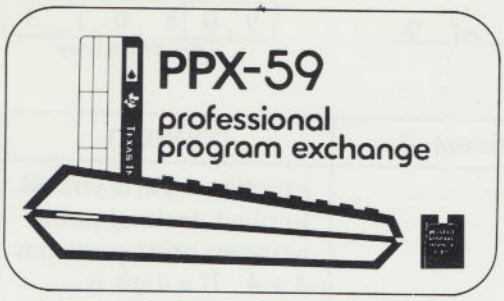
STEP	PROCEDURE	ENTER	PRESS		OUTPUT/MODE (see legend below)
1	To Store Alpha Codes	5151515151	STO	31	5151515151
	Note: These values might be stored on a	4747474747	STO	33	4747474747
	mag card for future ease of entry	5100000000	STO	41	5100000000
		5151000000	STO	42	5151000000
		5151510000	STO	43	5151510000
		5151515100	STO	44	5151515100
2	To Enter Data Points	CLR	RST	C	1
	(Press RST to Enter New Points)	X_1		C	2
		X_2		C	3
		"			
		"			
		X_{20}		C	Flashing 9's
				CLR	0
3	To Scale Graph:				
	(a) Set Maximum to Largest X			A	0
	(b) Set Maximum to X		X	B	X
4	To Plot Graph:			D	
	NOTE: Digit directly adjacent to plot is the fractional part of the number. Hence, there is an implied decimal point between print positions 3 and 4.				

Modes: (n)•—Printed only (n)—Displayed Briefly (Pause)
n•—Printed and displayed

DATA REGISTERS (INV List)

0	Counter
1-20	Data Values
25	Ind. Recall
30	Maximum
31	Alpha-Num(*****)
32	Working
33	Alpha-Num(+++++)
35	Remainder
54	Working
55	Working
56	Integer Part
58	OP 01 Register
6	
7	
8	
9	

☐ See Continuation Sheet



9,0 8,0 1,3
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TEXAS INSTRUMENTS
Calculator Products Division

Sample Problem

Statement of Example

PLOT THE VALUES:

10	4	14
12.5	5	12
9	8.9	
5.3	5	
7.2	11	
9.4	15	
6.3	19	
2.2	17	
3	18	

With the maximum value:
A) The Largest x (19)
B) X = 30

☐ See Continuation Sheet

ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT
CLR	RST C	1.	
10.	C	2.	
12.5	C	3.	
9.	C	4.	
5.3	C	5.	
7.2	C	6.	
9.4	C	7.	
6.3	C	8.	
2.2	C	9.	
3.	C	10.	
4.	C	11.	
5.	C	12.	
8.9	C	13.	
5.	C	14.	
11.	C	15.	
15.	C	16.	
19.	C	17.	
17.	C	18.	
18.	C	19.	
14.	C	20.	
12.	C	9.9999999 99	Flashing, indicating registers full
	CLR	0.	Set maximum to maximum in reg.
	A	0	
	D		Plot . . .
			Run Time - 10 min

Modes: (n)• —Printed only (n)—Displayed Briefly (Pause)
n• —Printed and displayed

Over

ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT
		(10 *******)* (125 *********)* (9 *******)* (53 ****)* (72 *****)* (94 *******)* (63 ****)* (22 *)* (3 **)* (4 ***)* (5 ***)* (89 *******)* (5 ***)* (11 ********)* (15 **********)* (19 +++++++++++++++)* (17 ************)* (18 *************)* (14 **********)* (12 *********)* (19. MAX)*	Fractional parts circled. Implied decimal point between print positions 3 + 4. If a digit is directly adjacent to the plot it is the fractional part. +'s indicating # ≥ to maximum value.
30	B D	30	Change Maximum to 30 Plot . . .
		(10 *****)* (125 ******)* (9 ****)* (53 **)* (72 ***)* (94 ****)* (63 ***)* (22 *)* (3 *)* (4 **)* (5 **)* (89 ****)* (5 **)* (11 *****)* (15 *******)* (19 *********)* (17 ********)* (18 *********)* (14 *******)* (12 ******)* (30. MAX)*	Fractional parts circled. Run time: 10 min.

Modes: (n)* —Printed only (n)—Displayed Briefly (Pause)
n*—Printed and displayed

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9,0 | 8,0,1,3
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LOC	CODE	KEY	COMMENTS
000	76	LBL	
001	75	-	
002	53	(	
003	43	RCL	
004	56	56	
005	85	+	
006	01	1	
007	54	)	
008	61	GTO	
009	55	÷	
010	76	LBL	
011	85	+	
012	04	4	
013	07	7	
014	04	4	
015	07	7	
016	00	0	
017	00	0	
018	42	STO	
019	58	58	
020	61	GTO	
021	98	ADV	
022	76	LBL	
023	86	STF	
024	86	STF	
025	04	04	
026	61	GTO	
027	78	Σ+	
028	76	LBL	
029	67	EQ	
030	22	INV	
031	87	IFF	
032	04	04	
033	79	x̄	
034	61	GTO	
035	78	Σ+	
036	76	LBL	
037	11	A	
038	00	0	
039	42	STO	
040	30	30	
041	00	0	
042	42	STO	
043	00	00	
044	76	LBL	
045	28	LOG	
046	01	1	
047	44	SUM	
048	00	00	
049	53	(	
050	43	RCL	
051	00	00	
052	75	-	
053	02	2	
054	01	1	
055	54	)	
056	77	GE	
057	39	COS	
058	53	(	
059	73	RC*	
060	00	00	
061	75	-	
062	43	RCL	
063	30	30	
064	54	)	
065	77	GE	
066	42	STO	
067	61	GTO	
068	28	LOG	
069	76	LBL	
070	42	STO	
071	73	RC*	
072	00	00	
073	42	STO	
074	30	30	
075	61	GTO	
076	28	LOG	
077	76	LBL	
078	39	COS	
079	91	R/S	
080	76	LBL	
081	13	C	
082	87	IFF	
083	01	01	
084	38	SIN	
085	87	IFF	
086	00	00	
087	68	NOP	
088	86	STF	
089	00	00	
090	42	STO	
091	00	00	
092	76	LBL	
093	68	NOP	
094	72	ST*	
095	00	00	
096	53	(	
097	43	RCL	
098	00	00	
099	75	-	
100	02	2	
101	00	0	
102	54	)	
103	77	GE	
104	38	SIN	
105	01	1	
106	44	SUM	
107	00	00	
108	43	RCL	
109	00	00	
110	91	R/S	
111	76	LBL	
112	38	SIN	
113	86	STF	
114	01	01	
115	00	0	
116	35	1/X	
117	95	=	
118	91	R/S	
119	76	LBL	
120	14	D	
121	00	0	
122	42	STO	
123	58	58	
124	01	1	
125	42	STO	
126	25	25	
127	76	LBL	
128	29	CP	
129	69	DP	
130	00	00	
131	00	0	
132	29	CP	
133	53	(	
134	73	RC*	
135	25	25	
136	75	-	
137	43	RCL	
138	30	30	
139	54	)	
140	42	STO	
141	35	35	
142	77	GE	
143	59	INT	
144	53	(	
145	73	RC*	
146	25	25	
147	75	-	
148	53	(	
149	93	.	
150	06	6	
151	06	6	
152	65	×	
153	43	RCL	
154	30	30	
155	54	)	
156	54	)	
157	42	STO	
158	35	35	
159	77	GE	
160	89	π	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

LOC	CODE	KEY	COMMENTS
161	53	(	
162	73	RC*	
163	25	25	
164	75	-	
165	53	(	
166	03	3	
167	35	1/X	
168	65	×	
169	43	RCL	
170	30	30	
171	54	)	
172	54	)	
173	42	STO	
174	35	35	
175	77	GE	
176	30	TAN	
177	73	RC*	
178	25	25	
179	42	STO	
180	35	35	
181	71	SBR	
182	49	PRD	
183	69	OP	
184	02	02	
185	61	GTO	
186	99	PRT	
187	76	LBL	
188	49	PRD	
189	43	RCL	
190	35	35	
191	67	EQ	
192	99	PRT	
193	50	I×I	
194	53	(	
195	53	(	
196	43	RCL	
197	35	35	
198	55	÷	
199	53	(	
200	43	RCL	
201	30	30	
202	55	÷	
203	01	1	
204	05	5	
205	54	)	
206	54	)	
207	85	+	
208	04	4	
209	00	0	
210	54	)	
211	42	STO	
212	32	32	
213	73	RC*	
214	32	32	
215	92	RTN	
216	76	LBL	
217	59	INT	
218	43	RCL	
219	33	33	
220	69	OP	
221	02	02	
222	69	OP	
223	03	03	
224	69	OP	
225	04	04	
226	61	GTO	
227	99	PRT	
228	76	LBL	
229	89	π	
230	43	RCL	
231	31	31	
232	69	OP	
233	02	02	
234	69	OP	
235	03	03	
236	71	SBR	
237	49	PRD	
238	69	OP	
239	04	04	
240	61	GTO	
241	99	PRT	
242	76	LBL	
243	30	TAN	
244	43	RCL	
245	31	31	
246	69	OP	
247	02	02	
248	71	SBR	
249	49	PRD	
250	69	OP	
251	03	03	
252	76	LBL	
253	99	PRT	
254	00	0	
255	42	STO	
256	58	58	
257	01	1	
258	00	0	
259	42	STO	
260	55	55	
261	73	RC*	
262	25	25	
263	50	I×I	
264	42	STO	
265	54	54	
266	22	INV	
267	86	STF	
268	04	04	
269	76	LBL	
270	57	ENG	
271	53	(	
272	43	RCL	
273	54	54	
274	55	÷	
275	01	1	
276	00	0	
277	45	YX	
278	05	5	
279	54	)	
280	42	STO	
281	54	54	
282	65	×	
283	01	1	
284	00	0	
285	95	=	
286	59	INT	
287	22	INV	
288	67	EQ	
289	85	+	
290	76	LBL	
291	65	×	
292	53	(	
293	43	RCL	
294	54	54	
295	65	×	
296	01	1	
297	00	0	
298	54	)	
299	42	STO	
300	54	54	
301	59	INT	
302	42	STO	
303	56	56	
304	22	INV	
305	67	EQ	
306	86	STF	
307	43	RCL	
308	55	55	
309	75	-	
310	02	2	
311	95	=	
312	22	INV	
313	77	GE	
314	98	ADV	
315	76	LBL	
316	88	DMS	
317	43	RCL	
318	56	56	
319	67	EQ	
?220	67	EQ	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

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9,0|8,0|1,3
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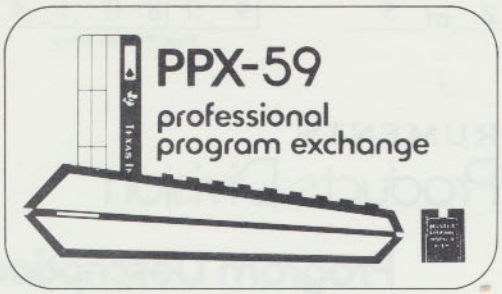
LOC	CODE	KEY	COMMENTS
321	76	LBL	
322	78	Σ+	
323	53	(	
324	43	RCL	
325	56	56	
326	75	-	
327	07	7	
328	54	)	
329	22	INV	
330	77	GE	
331	75	-	
332	53	(	
333	43	RCL	
334	56	56	
335	85	+	
336	03	3	
337	54	)	
338	76	LBL	
339	55	÷	
340	65	×	
341	01	1	
342	00	0	
343	45	Y^x	
344	43	RCL	
345	55	55	
346	95	=	
347	44	SUM	
348	58	58	
349	76	LBL	
350	79	x̄	
351	53	(	
352	43	RCL	
353	55	55	
354	75	-	
355	02	2	
356	54	)	
357	02	2	
358	22	INV	
359	44	SUM	
360	55	55	
361	43	RCL	
362	56	56	
363	22	INV	
364	44	SUM	
365	54	54	
366	43	RCL	
367	54	54	
368	61	GTO	
369	65	×	
370	76	LBL	
371	98	ADV	
372	43	RCL	
373	58	58	
374	52	EE	

LOC	CODE	KEY	COMMENTS
375	22	INV	
376	52	EE	
377	69	OP	
378	01	01	
379	69	OP	
380	05	05	
381	69	OP	
382	00	00	
383	01	1	
384	44	SUM	
385	25	25	
386	43	RCL	
387	25	25	
388	75	-	
389	02	2	
390	01	1	
391	95	=	
392	77	GE	
393	91	R/S	
394	61	GTO	
395	29	CP	
396	76	LBL	
397	91	R/S	
398	03	3	
399	00	0	
400	01	1	
401	03	3	
402	04	4	
403	04	4	
404	69	OP	
405	04	04	
406	43	RCL	
407	30	30	
408	69	OP	
409	06	06	
410	91	R/S	
411	76	LBL	
412	12	B	
413	50	I×I	
414	42	STO	
415	30	30	
416	91	R/S	

LOC	CODE	KEY	COMMENTS

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR



90 80 14
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TEXAS INSTRUMENTS
Calculator Products Division

Submission Abstract

Program Title	Rev.
ALPHANUMERIC REGISTER LISTING	

Abstract of Program

Provides a list of the registers with their contents. And what these contents represent as alphanumeric op codes.

User Benefits:

An easy to use aid to debugging.

Category Name	Required Progs.	Prog. Steps	Card Sides	PC-100A Needed / Library Module ID
Utility		101	1	☐ / ☐

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Signature _____ Date _____

Name Texas Instruments Tel. No. _____

Address _____

City _____ State _____ Zip _____

Submission Checklist

- ☒ Recorded Magnetic Cards
- ☒ Submission Abstract
- ☒ Program Description
- ☒ User Instructions
- ☒ Sample Problem
- ☒ Listing
- ☐ _____
- ☐ _____

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Calculator Products Division

Program Description

Program Title: ALPHANUMERIC REGISTER LISTING	Rev.

Method, Equations, Sketches, Limitations, References, Error Recovery:

Program takes the number of this display at the time C is pressed and stores this number in Register 00. Then, using this number as the starting point and the last register in the current partition as the stopping point, the program calculates the number of registers to be printed. The program uses a subroutine of INVINT and INT to change the register number into its corresponding alphanumeric code. This code is then an op 04 is performed and the contents of the register are recalled and printed through the use of an op 06. Then the op register is cleared and the contents of the required register are op 02 and op 05. Then a DSZ Loop is used to loop back to start the process over for the next register.

Caution: This program uses Registers 00, 01 and 02, and thus the contents of these registers are lost.

☐ See Continuation Sheet

9,0|8,0,1,4

PPX-59
professional program exchange

User Instructions

Program Title
ALPHANUMERIC REGISTER LISTING

		Start		

Partition (OP 17): 479 . 59
Parenthesis Levels: 0
Angular Mode (if applicable):
SBR Levels: 2
Library Module ID:
t Register ☑
Absolute Addresses ☐
Disturbs Pending Operations ☑

LABELS (Op 08)

INV	ln x	CE	CLR	x⇄t	x²
√x	1/x	STO	RCL	SUM	y^x
EE	(	)	÷	GTO	X
SBR	−	RST	+	R/S	•
+/−	=	CLR	INV	log	CP
tan	Pgm	P→R	sin	cos	CMs
Exc	Prd	|x|	Eng	Fix	Int
Deg	Pause	x=t	Nop	Op	Rad
Lbl	x≠t	Σ+	x̄	Grad	St flg
If flg	D.MS	π	List	Write	Dsz
Adv	Prt				

USER DEFINED KEYS

A	12
B	
C	Start Listing
D	
E	Convert Reg # to Code
A'	
B'	
C'	
D'	
E'	

FLAGS	0	1	2	3	4	5	6	7	8	9

STEP	PROCEDURE	ENTER	PRESS	OUTPUT/MODE (see legend below)
1	Enter First register to be listed and start list	Reg. #	C	(Contents Reg #)* (Alphanumerics)* 1

Modes: (n)•—Printed only (n)—Displayed Briefly (Pause)
n•—Printed and displayed

☐ See Continuation Sheet

DATA REGISTERS (INV List)

0	Store Reg. Number
1	Alph Code
2	DSZ Loop
3	
4	
5	
6	
7	
8	
9	
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

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Calculator Products Division

Sample Problem

Statement of Example

Load some alphanumeric codes into registers 51 through 59 and the registers will be listed.

☐ See Continuation Sheet

ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT
37232436	STO 51	37232436	Enter Alpha Codes
43242727	STO 52	43242727	
36233243	STO 53	36233243	
372317	STO 54	372317	
33353220	STO 55	33353220	
2235133036	STO 56	2235133036	
41361720	STO 57	41361720	
21412720	STO 58	21412720	
31173636	STO 59	31173636	
	51 C	(37232436. 51)*	Start List
		(THIS)*	
		(43242727. 52)*	
		(WILL)*	
		(36233243. 53)*	
		(SHOW)*	
		(372317. 54)*	
		(THE)*	
		(33353220. 55)*	
		(PRO-)*	
		(2235133036. 56)*	
		(GRAMS)*	
		(41361720. 57)*	
		(USE-)*	
		(21412720. 58)*	
		(FUL-)*	
		(31173636. 59)*	
		(NESS)*	

Modes: (n)*—Printed only (n)—Displayed Briefly (Pause)
n*—Printed and displayed

☐ Over

PPX-59 Professional Program Exchange

9,0 8,0 1,4
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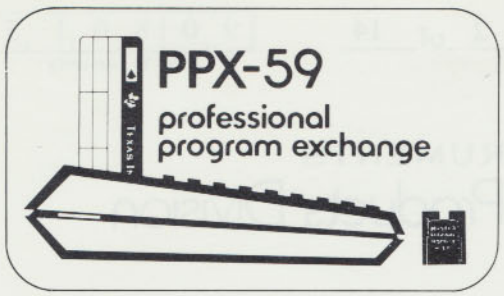
LOC	CODE	KEY	COMMENTS
000	76	LBL	
001	15	E	
002	55	÷	
003	01	1	
004	00	0	
005	95	=	
006	22	INV	
007	59	INT	
008	65	×	
009	01	1	
010	00	0	
011	95	=	
012	22	INV	
013	67	EQ	
014	87	IFF	
015	11	A	
016	76	LBL	
017	87	IFF	
018	85	+	
019	01	1	
020	95	=	
021	42	STO	
022	01	01	
023	43	RCL	
024	00	00	
025	55	÷	
026	01	1	
027	00	0	
028	95	=	
029	59	INT	
030	22	INV	
031	67	EQ	
032	88	DMS	
033	11	A	
034	76	LBL	
035	88	DMS	
036	85	+	
037	01	1	
038	95	=	
039	65	×	
040	01	1	
041	00	0	
042	00	0	
043	95	=	
044	44	SUM	
045	01	01	
046	92	RTN	
047	76	LBL	
048	11	A	
049	01	1	
050	01	1	
051	92	RTN	
052	76	LBL	
053	13	C	
054	42	STO	
055	00	00	
056	94	+/-	
057	85	+	
058	69	OP	
059	16	16	
060	22	INV	
061	59	INT	
062	65	×	
063	01	1	
064	00	0	
065	00	0	
066	85	+	
067	01	1	
068	95	=	
069	42	STO	
070	02	02	
071	09	9	
072	32	X;T	
073	76	LBL	
074	76	LBL	
075	43	RCL	
076	00	00	
077	15	E	
078	43	RCL	
079	01	01	
080	69	OP	
081	04	04	
082	73	RC*	
083	00	00	
084	69	OP	
085	06	06	
086	69	OP	
087	00	00	
088	73	RC*	
089	00	00	
090	69	OP	
091	02	02	
092	69	OP	
093	05	05	
094	01	1	
095	44	SUM	
096	00	00	
097	97	DSZ	
098	02	02	
099	76	LBL	
100	92	RTN	

LOC	CODE	KEY	COMMENTS

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR



9,0|8,0,1,5
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TEXAS INSTRUMENTS
Calculator Products Division

Submission Abstract

Program Title	Rev.
TI-59 BANNER PROGRAM	

Abstract of Program

Program users a matrix to print letters of the alphabet on the PC-100A printer. PC100A required.

User Benefits:

Can be used to make banners, posters, headings, etc.

Category Name: Utility	Required Progs.:	Prog. Steps: 706	Card Sides: 4	PC-100A Needed ☒ Library Module ID: ☐

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Signature Mark K. House Date

Name Mark K. House Tel. No.

Address Mark K. House - P. O. Box 1658 SMU

City Dallas State Texas Zip 75275

Submission Checklist

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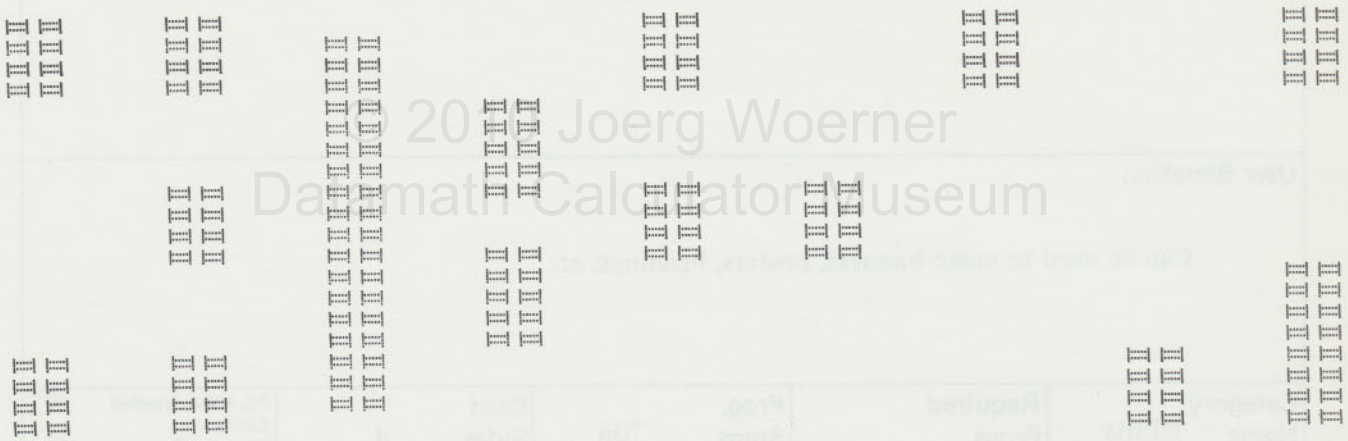
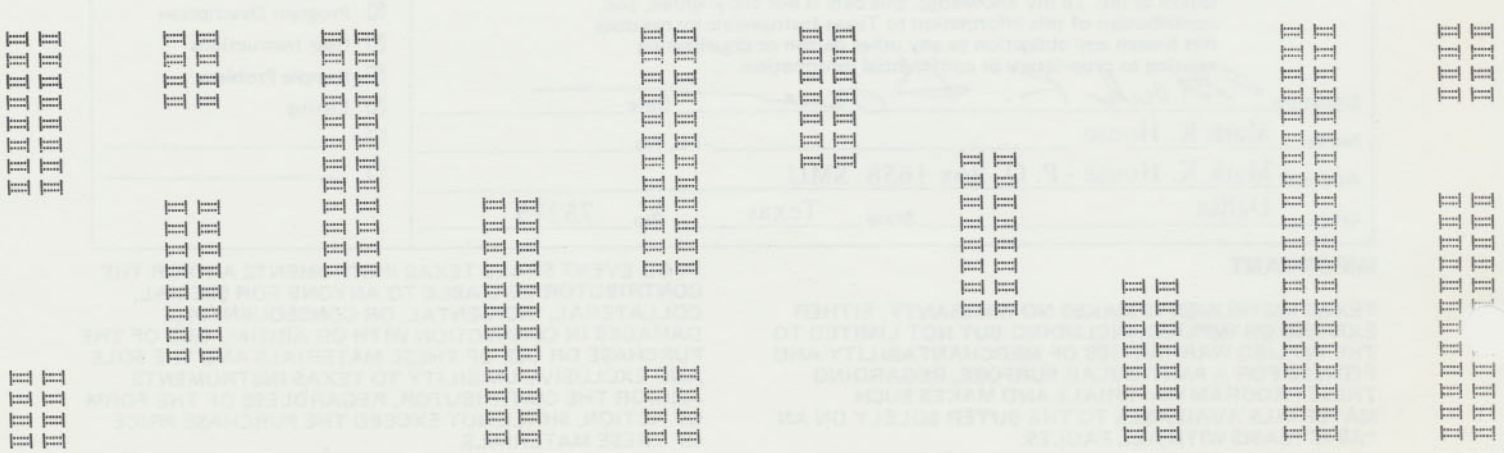
Calculator Products Division

CHARACTER CONSTRUCTION

Any number of possible characters can be constructed by calling the following subroutines. To space between characters, call SBR ADV 3 times for adequate space. (Numbers and special characters are relatively east to construct.



*PGM *P→R *SIN *COS *TAN *CMS *EXC *PRD *Σ+



*ENG *FIX *INT *|x| *x=t *NOP *OP *DEG *RAD *GRA

9,0 | 8,0,1,5

PPX-59
professional program exchange

User Instructions

Program Title BANNER PROGRAM

F	G	H	I	J
A	B	C	D	E

Partition (OP 17): 879 . 09

Parenthesis Levels:

t Register: ☐

Angular Mode (if applicable):

SBR Levels:

Absolute Addresses: ☑

Library Module ID:

Disturbs Pending Operations: ☑

LABELS (Op 08)

INV	✓	ln x	✓	CE	✓	CLR	✓	x:t	✓	x²	✓
√x	✓	1/x	✓	STO	✓	RCL	✓	SUM	✓	y^x	✓
EE	✓	(| ✓ |)	✓	÷	✓	GTO		×	
SBR		−		RST		+		R/S		•	
+/−		=		CLR		INV		log		CP	
tan	✓	Pgm	✓	P→R	✓	sin	✓	cos	✓	CMs	✓
Exc	✓	Prd	✓	Ix I	✓	Eng	✓	Fix	✓	Int	✓
Deg	✓	Pause	✓	x=t	✓	Nop	✓	Op	✓	Rad	✓
Lbl		x≥t		Σ+	✓	x̄		Grad		St flg	
If flg		D.MS		π		List		Write		Dsz	
Adv	✓	Prt	✓								

USER DEFINED KEYS

A	A
B	B
C	C
D	D
E	E
A'	F
B'	G
C'	H
D'	I
E'	J

FLAGS	0	1	2	3	4	5	6	7	8	9

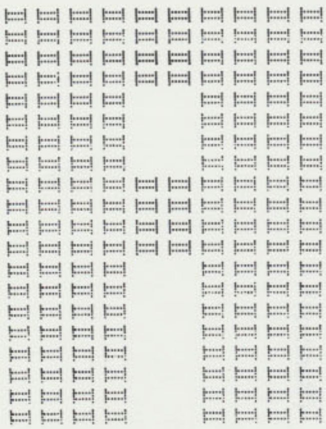
STEP	PROCEDURE	ENTER	PRESS		OUTPUT/MODE (see legend below)
1	See accompanying pages for subroutines be executed for the various letters.				
2.	To program a banner Key in Subroutines For B to Print Banner Note: SBR Adv will provide an equal spacing.		GTO ' ' ' ' ' RTN	LST	706 00 ' ' ' ' ' 0
3.	To Execute Banner		SBR	LST	(Banner)*

Modes: (n)*—Printed only (n)—Displayed Briefly (Pause)
n*—Printed and displayed

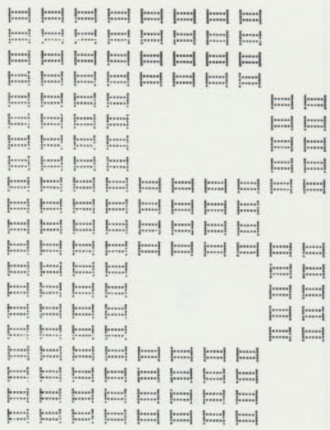
☐ See Continuation Sheet

DATA REGISTERS (INV LST)

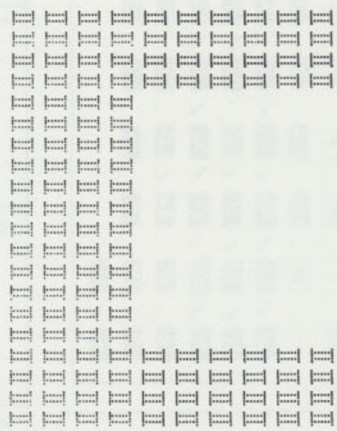
0	0
1	7474747474
2	7474747400
3	7474740000
4	7474000000
5	7400000000
6	74
7	7474
8	747474
9	74747474
0	
1	Note: These should
2	be stored before
3	executing the
4	program.
5	
6	
7	
8	
9	



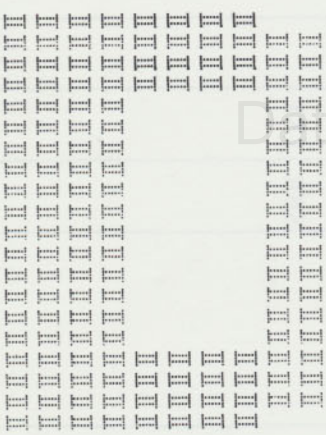
A



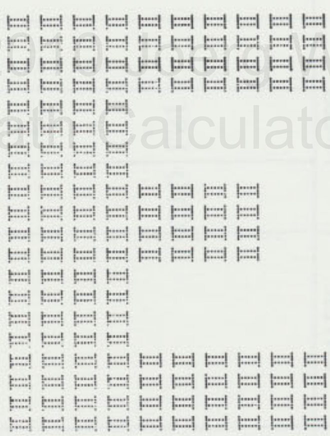
B



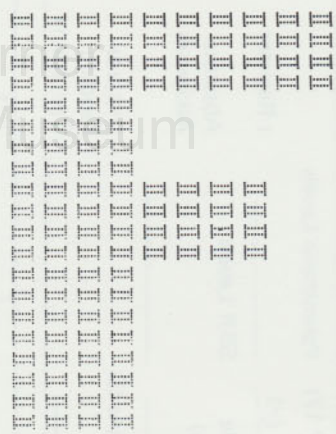
C



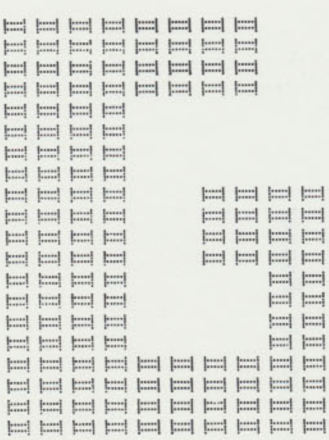
D



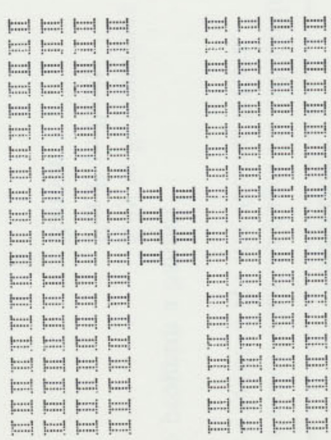
E



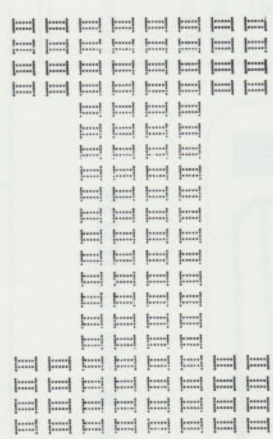
A'



B'



C'



D'

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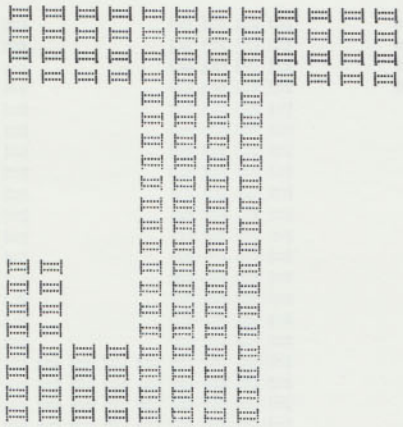
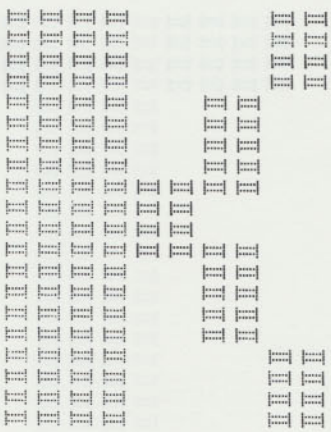
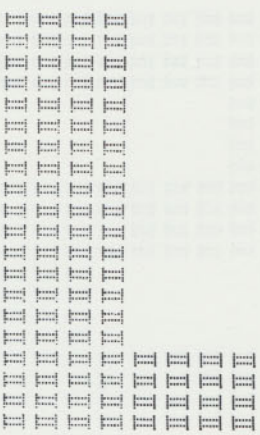


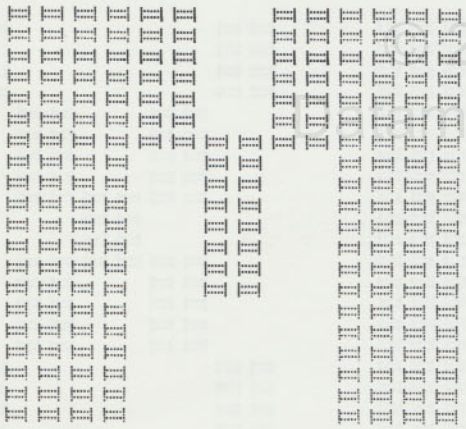
E'



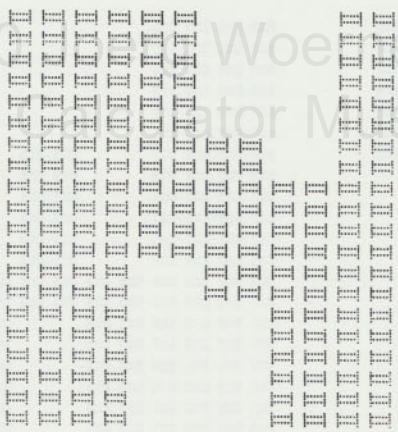
SBR INV



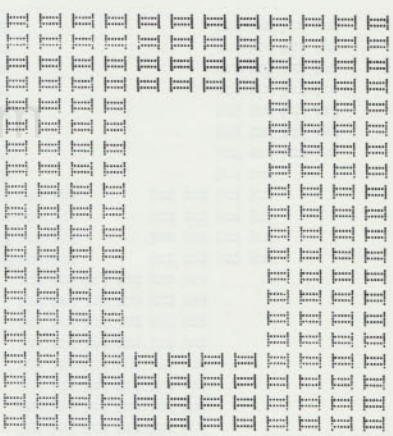
SBR INX



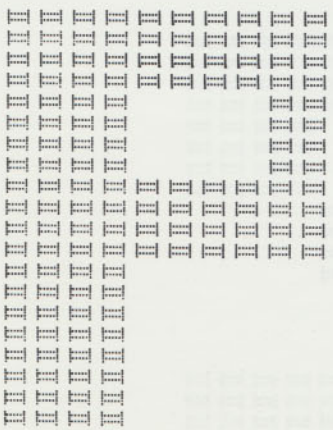
SBR CE



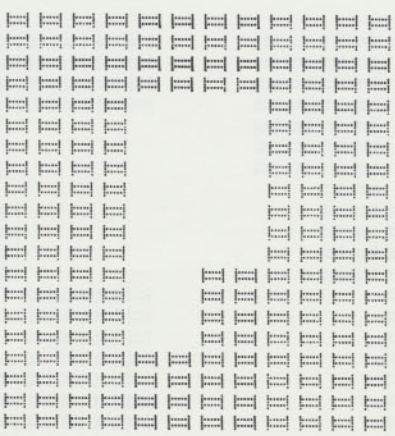
SBR CLR



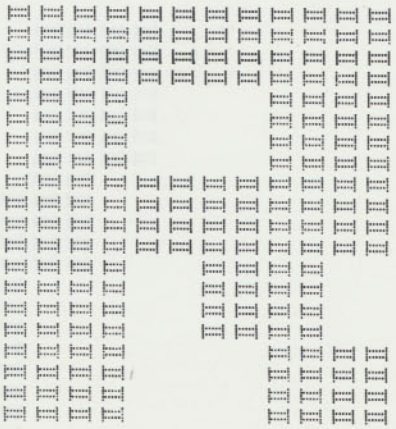
SBR X≥t



SBR X^2



SBR $\sqrt{X}$



SBR 1/X

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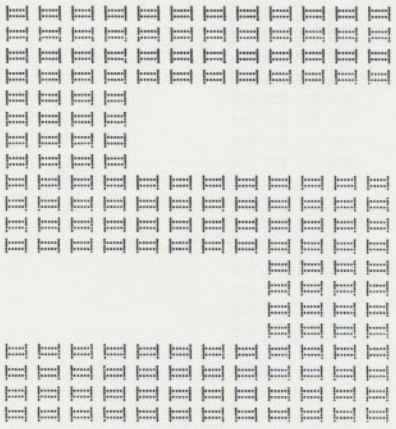
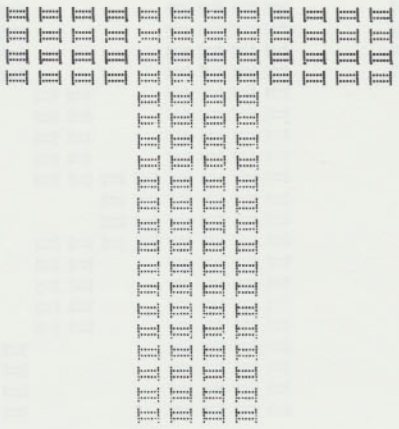
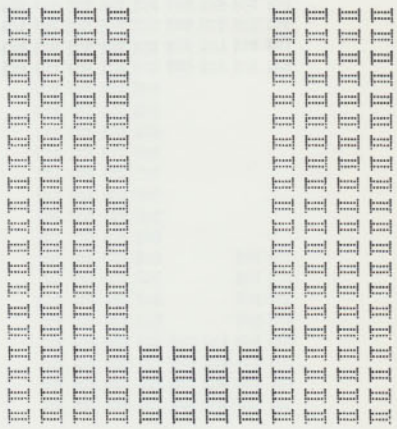


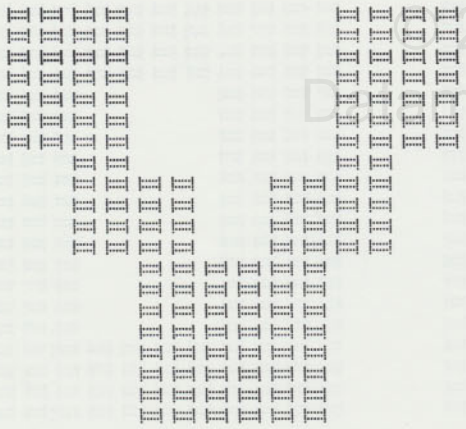
SBR STO



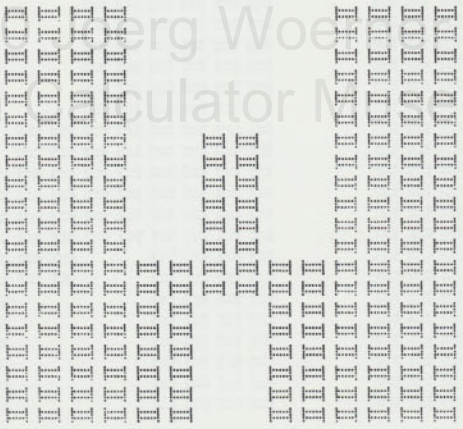
SBR RCL



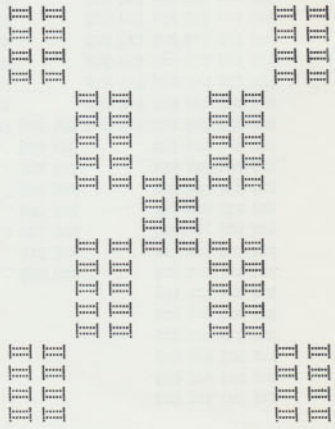
SBR SUM



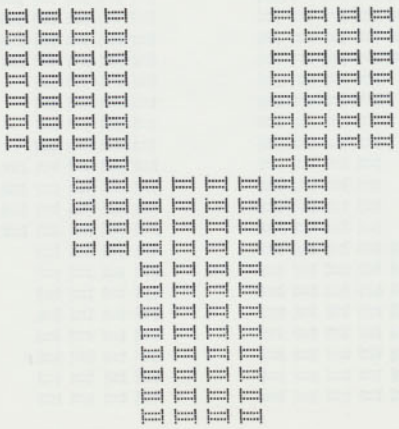
SBR Y^X



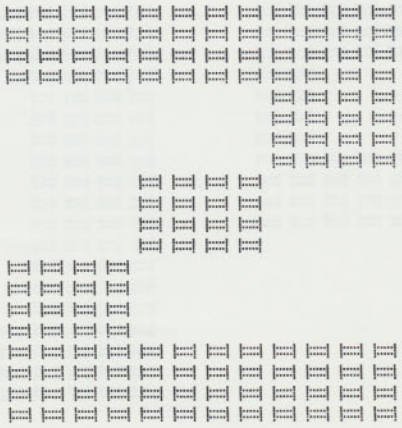
SBR EE



SBR (



SBR)



SBR ÷

TEXAS INSTRUMENTS
Calculator Products Division

Sample Problem

Statement of Example

Make a Banner that will read

"BANNER PROGRAM"

☐ See Continuation Sheet

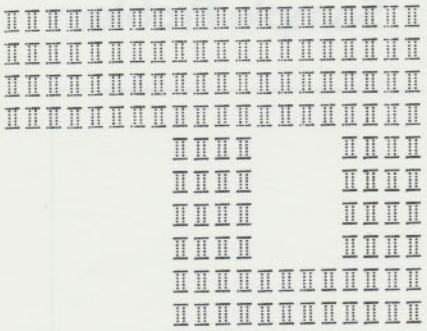
ENTER	PRESS	OUTPUT/MODE (see legend below)		COMMENT
	GTO LST	0		
	LRN	706	00	
	B A SBR CLR	710	00	BAN
	SBR CLR E	713	00	NE
	SBR 1/X SBR ADV	717	00	R
	SBR X^2 SBR 1/X	721	00	P
	SBR X≷t B'	724	00	RO
	SBR 1/X A	726	00	GA
	SBR CE	729	00	M
	SBR ADV	731	00	
	RTN	732	00	
	LRN	0		
	SBR LST			

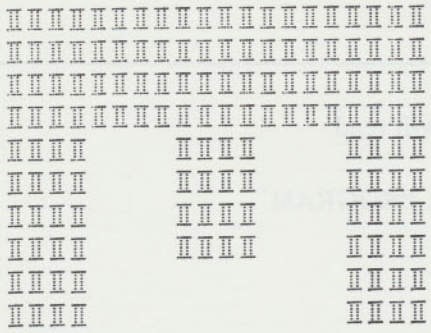
See accompanying pages for output

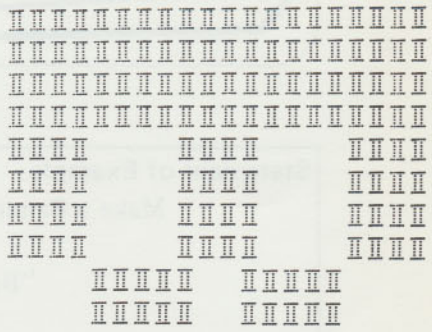
Modes: (n)*—Printed only (n)—Displayed Briefly (Pause)
n*—Printed and displayed

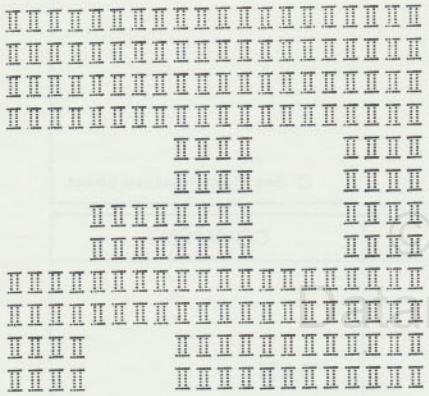
☐ Over

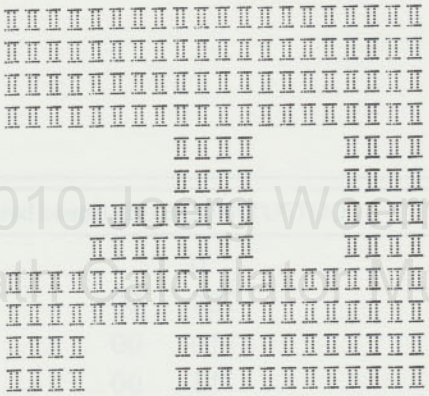
TEXAS INSTRUMENTS
Calculator Products Division

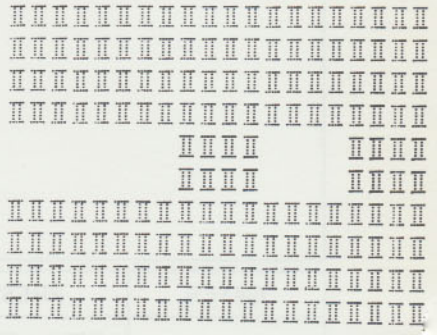


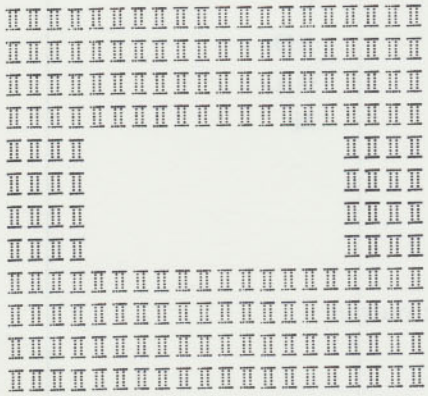


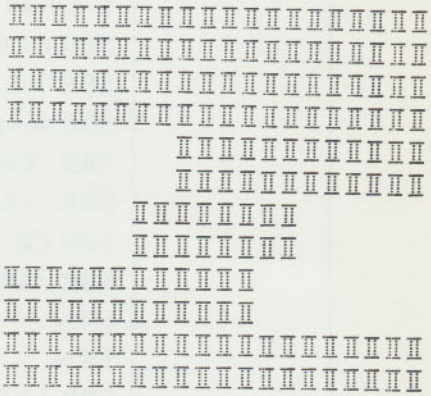


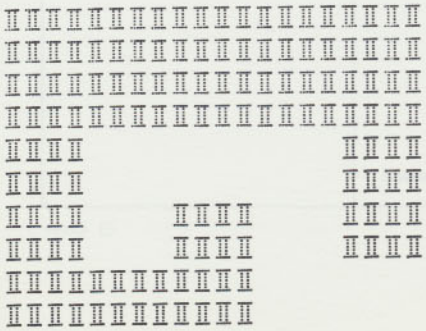


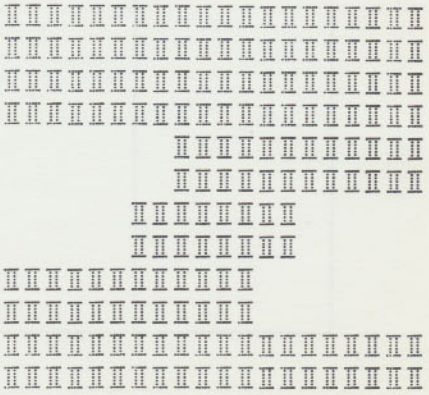


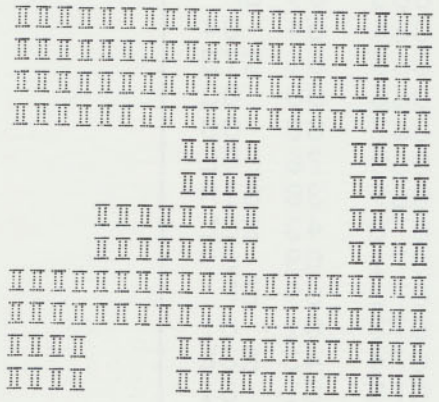


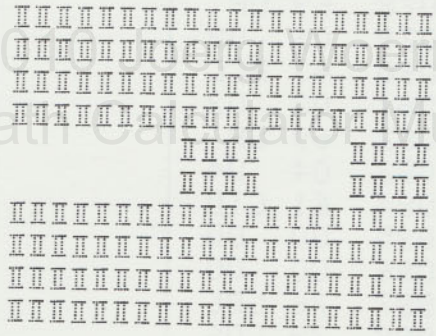


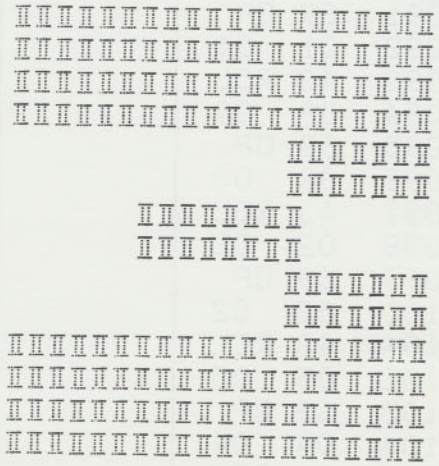












PPX-59 Professional Program Exchange

9,0 8,0 1,5
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LOC	CODE	KEY	COMMENTS
000	69	□P	
001	05	05	
002	69	□P	
003	05	05	
004	69	□P	
005	00	00	
006	92	RTN	
007	76	LBL	
008	79	x̄	
009	43	RCL	
010	01	01	
011	69	□P	
012	01	01	
013	69	□P	
014	02	02	
015	69	□P	
016	03	03	
017	69	□P	
018	04	04	
019	61	GT□	
020	99	PRT	
021	76	LBL	
022	99	PRT	
023	69	□P	
024	05	05	
025	69	□P	
026	05	05	
027	69	□P	
028	05	05	
029	69	□P	
030	05	05	
031	69	□P	
032	00	00	
033	92	RTN	
034	76	LBL	
035	36	PGM	
036	43	RCL	
037	02	02	
038	69	□P	
039	01	01	
040	43	RCL	
041	09	09	
042	69	□P	
043	04	04	
044	61	GT□	
045	00	00	
046	00	00	
047	76	LBL	
048	37	P/R	
049	43	RCL	
050	02	02	
051	69	□P	
052	01	01	
053	43	RCL	
054	07	07	

LOC	CODE	KEY	COMMENTS
055	69	□P	
056	02	02	
057	43	RCL	
058	04	04	
059	69	□P	
060	03	03	
061	43	RCL	
062	09	09	
063	69	□P	
064	04	04	
065	61	GT□	
066	00	00	
067	00	00	
068	76	LBL	
069	38	SIN	
070	43	RCL	
071	09	09	
072	69	□P	
073	01	01	
074	43	RCL	
075	01	01	
076	69	□P	
077	02	02	
078	69	□P	
079	03	03	
080	43	RCL	
081	02	02	
082	69	□P	
083	04	04	
084	61	GT□	
085	00	00	
086	00	00	
087	76	LBL	
088	39	C□S	
089	43	RCL	
090	06	06	
091	69	□P	
092	01	01	
093	43	RCL	
094	09	09	
095	69	□P	
096	03	03	
097	43	RCL	
098	02	02	
099	69	□P	
100	02	02	
101	43	RCL	
102	05	05	
103	69	□P	
104	04	04	
105	61	GT□	
106	00	00	
107	00	00	
108	76	LBL	
109	30	TAN	

LOC	CODE	KEY	COMMENTS
110	43	RCL	
111	07	07	
112	69	□P	
113	02	02	
114	43	RCL	
115	04	04	
116	69	□P	
117	03	03	
118	43	RCL	
119	09	09	
120	69	□P	
121	04	04	
122	61	GT□	
123	00	00	
124	00	00	
125	76	LBL	
126	47	CMS	
127	43	RCL	
128	07	07	
129	69	□P	
130	02	02	
131	43	RCL	
132	04	04	
133	69	□P	
134	03	03	
135	61	GT□	
136	00	00	
137	00	00	
138	76	LBL	
139	48	EXC	
140	43	RCL	
141	09	09	
142	69	□P	
143	04	04	
144	61	GT□	
145	00	00	
146	00	00	
147	76	LBL	
148	49	PRD	
149	43	RCL	
150	02	02	
151	69	□P	
152	01	01	
153	61	GT□	
154	00	00	
155	00	00	
156	76	LBL	
157	78	Σ+	
158	43	RCL	
159	01	01	
160	69	□P	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

PPX-59 Professional Program Exchange

9 0 8 0 1 5
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LOC	CODE	KEY	COMMENTS
161	01	01	
162	43	RCL	
163	03	03	
164	69	□P	
165	02	02	
166	43	RCL	
167	09	09	
168	69	□P	
169	04	04	
170	61	GT□	
171	00	00	
172	00	00	
173	76	LBL	
174	57	ENG	
175	43	RCL	
176	02	02	
177	69	□P	
178	01	01	
179	43	RCL	
180	08	08	
181	69	□P	
182	03	03	
183	43	RCL	
184	01	01	
185	69	□P	
186	04	04	
187	61	GT□	
188	00	00	
189	00	00	
190	76	LBL	
191	58	FIX	
192	43	RCL	
193	06	06	
194	69	□P	
195	01	01	
196	43	RCL	
197	01	01	
198	69	□P	
199	02	02	
200	43	RCL	
201	04	04	
202	69	□P	
203	03	03	
204	43	RCL	
205	09	09	
206	69	□P	
207	04	04	
208	61	GT□	
209	00	00	
210	00	00	
211	76	LBL	
212	59	INT	
213	43	RCL	
214	07	07	
215	69	□P	

LOC	CODE	KEY	COMMENTS
216	02	02	
217	43	RCL	
218	01	01	
219	69	□P	
220	03	03	
221	69	□P	
222	04	04	
223	61	GT□	
224	00	00	
225	00	00	
226	76	LBL	
227	50	I×I	
228	43	RCL	
229	01	01	
230	69	□P	
231	01	01	
232	69	□P	
233	02	02	
234	43	RCL	
235	04	04	
236	69	□P	
237	03	03	
238	61	GT□	
239	00	00	
240	00	00	
241	76	LBL	
242	67	EQ	
243	43	RCL	
244	02	02	
245	69	□P	
246	01	01	
247	43	RCL	
248	07	07	
249	69	□P	
250	02	02	
251	43	RCL	
252	01	01	
253	69	□P	
254	03	03	
255	69	□P	
256	04	04	
257	61	GT□	
258	00	00	
259	00	00	
260	76	LBL	
261	98	ADV	
262	98	ADV	
263	98	ADV	
264	92	RTN	
265	76	LBL	
266	68	NOP	
267	43	RCL	
268	01	01	
269	69	□P	
270	04	04	

LOC	CODE	KEY	COMMENTS
271	43	RCL	
272	07	07	
273	69	□P	
274	03	03	
275	61	GT□	
276	00	00	
277	00	00	
278	76	LBL	
279	69	□P	
280	43	RCL	
281	02	02	
282	69	□P	
283	03	03	
284	43	RCL	
285	09	09	
286	69	□P	
287	02	02	
288	61	GT□	
289	00	00	
290	00	00	
291	76	LBL	
292	60	DEG	
293	43	RCL	
294	01	01	
295	69	□P	
296	01	01	
297	43	RCL	
298	03	03	
299	69	□P	
300	02	02	
301	61	GT□	
302	00	00	
303	00	00	
304	76	LBL	
305	70	RAD	
306	43	RCL	
307	01	01	
308	69	□P	
309	01	01	
310	69	□P	
311	02	02	
312	69	□P	
313	03	03	
314	69	□P	
315	04	04	
316	69	□P	
317	05	05	
318	69	□P	
319	05	05	
320	69	□P	
321	00	00	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

PPX-59 Professional Program Exchange

9,0 | 8,0,1,5
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LOC	CODE	KEY	COMMENTS
322	92	RTN	
323	76	LBL	
324	80	GRD	
325	43	RCL	
326	01	01	
327	69	OP	
328	01	01	
329	69	OP	
330	02	02	
331	43	RCL	
332	09	09	
333	69	OP	
334	04	04	
335	43	RCL	
336	04	04	
337	69	OP	
338	03	03	
339	61	GTO	
340	00	00	
341	00	00	
342	76	LBL	
343	11	A	
344	71	SBR	
345	79	x̄	
346	71	SBR	
347	30	TAN	
348	71	SBR	
349	79	x̄	
350	71	SBR	
351	98	ADV	
352	92	RTN	
353	76	LBL	
354	12	B	
355	71	SBR	
356	79	x̄	
357	71	SBR	
358	37	P/R	
359	71	SBR	
360	37	P/R	
361	71	SBR	
362	39	COS	
363	71	SBR	
364	98	ADV	
365	92	RTN	
366	76	LBL	
367	13	C	
368	71	SBR	
369	79	x̄	
370	71	SBR	
371	36	PGM	
372	71	SBR	
373	36	PGM	
374	71	SBR	
375	36	PGM	
376	71	SBR	

LOC	CODE	KEY	COMMENTS
377	98	ADV	
378	92	RTN	
379	76	LBL	
380	14	D	
381	71	SBR	
382	79	x̄	
383	71	SBR	
384	36	PGM	
385	71	SBR	
386	36	PGM	
387	71	SBR	
388	38	SIN	
389	71	SBR	
390	98	ADV	
391	92	RTN	
392	76	LBL	
393	15	E	
394	71	SBR	
395	79	x̄	
396	71	SBR	
397	37	P/R	
398	71	SBR	
399	37	P/R	
400	71	SBR	
401	36	PGM	
402	71	SBR	
403	98	ADV	
404	92	RTN	
405	76	LBL	
406	16	A'	
407	71	SBR	
408	79	x̄	
409	71	SBR	
410	30	TAN	
411	71	SBR	
412	30	TAN	
413	71	SBR	
414	48	EXC	
415	71	SBR	
416	98	ADV	
417	92	RTN	
418	76	LBL	
419	17	B'	
420	71	SBR	
421	79	x̄	
422	71	SBR	
423	36	PGM	
424	71	SBR	
425	37	P/R	
426	71	SBR	
427	50	I×I	
428	71	SBR	
429	98	ADV	
430	92	RTN	
431	76	LBL	

LOC	CODE	KEY	COMMENTS
432	18	C'	
433	71	SBR	
434	79	x̄	
435	71	SBR	
436	47	CMS	
437	71	SBR	
438	79	x̄	
439	71	SBR	
440	98	ADV	
441	92	RTN	
442	76	LBL	
443	19	D'	
444	71	SBR	
445	36	PGM	
446	71	SBR	
447	79	x̄	
448	71	SBR	
449	36	PGM	
450	71	SBR	
451	98	ADV	
452	92	RTN	
453	76	LBL	
454	10	E'	
455	71	SBR	
456	78	Σ+	
457	71	SBR	
458	36	PGM	
459	71	SBR	
460	79	x̄	
461	71	SBR	
462	48	EXC	
463	71	SBR	
464	48	EXC	
465	71	SBR	
466	98	ADV	
467	92	RTN	
468	76	LBL	
469	22	INV	
470	71	SBR	
471	79	x̄	
472	71	SBR	
473	47	CMS	
474	71	SBR	
475	39	COS	
476	71	SBR	
477	36	PGM	
478	71	SBR	
479	98	ADV	
480	92	RTN	
481	76	LBL	
482	23	LNX	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

LOC	CODE	KEY	COMMENTS
483	71	SBR	
484	79	$\bar{x}$	
485	71	SBR	
486	49	PRD	
487	71	SBR	
488	49	PRD	
489	71	SBR	
490	98	ADV	
491	92	RTN	
492	76	LBL	
493	24	CE	
494	71	SBR	
495	79	$\bar{x}$	
496	71	SBR	
497	68	NOP	
498	71	SBR	
499	69	OP	
500	71	SBR	
501	68	NOP	
502	71	SBR	
503	79	$\bar{x}$	
504	71	SBR	
505	98	ADV	
506	92	RTN	
507	76	LBL	
508	25	CLR	
509	71	SBR	
510	79	$\bar{x}$	
511	71	SBR	
512	59	INT	
513	71	SBR	
514	69	OP	
515	71	SBR	
516	50	I×I	
517	71	SBR	
518	70	RAD	
519	71	SBR	
520	98	ADV	
521	92	RTN	
522	76	LBL	
523	32	X:T	
524	71	SBR	
525	79	$\bar{x}$	
526	71	SBR	
527	36	PGM	
528	71	SBR	
529	36	PGM	
530	71	SBR	
531	79	$\bar{x}$	
532	71	SBR	
533	98	ADV	
534	92	RTN	
535	76	LBL	
536	33	X^2	
537	71	SBR	

LOC	CODE	KEY	COMMENTS
538	79	$\bar{x}$	
539	71	SBR	
540	30	TAN	
541	71	SBR	
542	30	TAN	
543	71	SBR	
544	59	INT	
545	71	SBR	
546	98	ADV	
547	92	RTN	
548	76	LBL	
549	34	$\sqrt{x}$	
550	71	SBR	
551	79	$\bar{x}$	
552	71	SBR	
553	36	PGM	
554	71	SBR	
555	78	$\Sigma+$	
556	71	SBR	
557	79	$\bar{x}$	
558	71	SBR	
559	98	ADV	
560	92	RTN	
561	76	LBL	
562	35	1/X	
563	71	SBR	
564	79	$\bar{x}$	
565	71	SBR	
566	30	TAN	
567	71	SBR	
568	58	FIX	
569	71	SBR	
570	70	RAD	
571	71	SBR	
572	67	EQ	
573	71	SBR	
574	98	ADV	
575	92	RTN	
576	76	LBL	
577	42	STO	
578	71	SBR	
579	67	EQ	
580	71	SBR	
581	67	EQ	
582	71	SBR	
583	37	P/R	
584	71	SBR	
585	37	P/R	
586	71	SBR	
587	80	GRD	
588	71	SBR	
589	80	GRD	
590	71	SBR	
591	98	ADV	
592	92	RTN	

LOC	CODE	KEY	COMMENTS
593	76	LBL	
594	43	RCL	
595	71	SBR	
596	48	EXC	
597	71	SBR	
598	48	EXC	
599	71	SBR	
600	79	$\bar{x}$	
601	71	SBR	
602	48	EXC	
603	71	SBR	
604	48	EXC	
605	71	SBR	
606	98	ADV	
607	92	RTN	
608	76	LBL	
609	44	SUM	
610	71	SBR	
611	79	$\bar{x}$	
612	71	SBR	
613	49	PRD	
614	71	SBR	
615	49	PRD	
616	71	SBR	
617	79	$\bar{x}$	
618	71	SBR	
619	98	ADV	
620	92	RTN	
621	76	LBL	
622	45	Y×	
623	71	SBR	
624	68	NOP	
625	71	SBR	
626	59	INT	
627	71	SBR	
628	50	I×I	
629	71	SBR	
630	60	DEG	
631	71	SBR	
632	50	I×I	
633	71	SBR	
634	59	INT	
635	71	SBR	
636	68	NOP	
637	71	SBR	
638	98	ADV	
639	92	RTN	
640	76	LBL	
641	52	EE	
642	71	SBR	
643	79	$\bar{x}$	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

PPX-59 Professional Program Exchange

9 0 8 0 1 5
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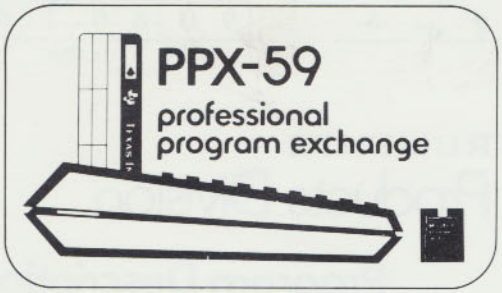
LOC	CODE	KEY	COMMENTS
644	71	SBR	
645	60	DEG	
646	71	SBR	
647	69	DP	
648	71	SBR	
649	60	DEG	
650	71	SBR	
651	79	x̄	
652	71	SBR	
653	98	ADV	
654	92	RTN	
655	76	LBL	
656	53	(	
657	71	SBR	
658	36	PGM	
659	71	SBR	
660	39	COS	
661	71	SBR	
662	47	CMS	
663	71	SBR	
664	39	COS	
665	71	SBR	
666	36	PGM	
667	71	SBR	
668	98	ADV	
669	92	RTN	
670	76	LBL	
671	54	)	
672	71	SBR	
673	68	NOP	
674	71	SBR	
675	59	INT	
676	71	SBR	
677	50	I×I	
678	71	SBR	
679	50	I×I	
680	71	SBR	
681	59	INT	
682	71	SBR	
683	68	NOP	
684	71	SBR	
685	98	ADV	
686	92	RTN	
687	76	LBL	
688	55	÷	
689	71	SBR	
690	78	Σ+	
691	71	SBR	
692	78	Σ+	
693	71	SBR	
694	37	P/R	
695	71	SBR	
696	37	P/R	
697	71	SBR	
698	57	ENG	
699	71	SBR	
700	57	ENG	
701	71	SBR	
702	98	ADV	
703	92	RTN	
704	76	LBL	
705	90	LST	

LOC	CODE	KEY	COMMENTS

MERGED CODES

62 Prm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR



90 8016
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TEXAS INSTRUMENTS
Calculator Products Division

Submission Abstract

Program Title	Rev.
MEMO PAD	

Abstract of Program

With this program you can use your calculator and PC-100A to write messages as on a typewriter.

User Benefits:

Provides an easy to use method to print messages.

Category Name	Required Progs.	Prog. Steps	Card Sides	PC-100A Needed / Library Module ID
Utility		307	2	☐ / ☐

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Submission Checklist

- ☒ Recorded Magnetic Cards
- ☒ Submission Abstract
- ☒ Program Description
- ☒ User Instructions
- ☒ Sample Problem
- ☒ Listing
- ☐ _____
- ☐ _____

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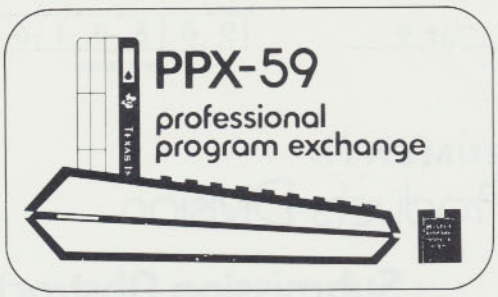

9 0	8 0	1 6

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TEXAS INSTRUMENTS
Calculator Products Division

Program Description

Program Title: MEMO PAD	Rev.

Method, Equations, Sketches, Limitations, References, Error Recovery:

1. Four data registers are used to store each line of your message beginning with R_4. If your message is k lines long, register 0 through 4k +3 must be left available for program use. Check the partitioning of your calculator to ensure that the needed registers are available. Repartitioning is necessary if you plan to enter more than 14 lines (6 for the TI-58). (See your Owner's Manual.)

2. If you want the calculator to begin storing your message in a higher register you may enter a line number, k, and press [2nd] [C']. This causes the calculator to leave lines 1 through k-1 blank and begin storing the message in register 4k. R_0 through R_3, as well as the T-Register, must be left available for program use.

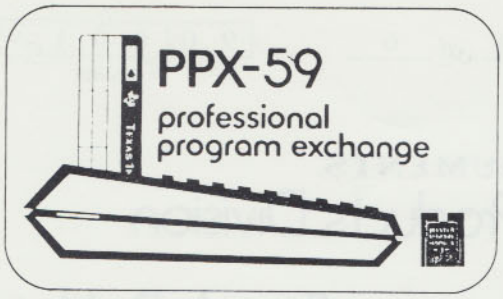
3. Pressing [2nd] [B'] prints the entire message stored in the calculator. However, if you wish to print a selected line, enter the line number and press [2nd] [D'].

4. If you make an error while entering a line, simply enter the number of the line in which the error was made and press [2nd] [C']. Then reenter the entire line.

5. If you discover an error after the line is entered, enter the number of the line, press [2nd] [C'] and reenter the entire line <u>including blanks at the end of the line</u>. Then enter k + 1, where k is the number of the last completed line, and press [2nd] [C'] before continuing.

6. Under normal circumstances your message is printed as you fill up each line. However, if you don't want your message printed as you enter it, simply press [2nd] [St flg] 1 after initialization.

☐ See Continuation Sheet



9 0	8 0 1 6

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TEXAS INSTRUMENTS
Calculator Products Division

User Instructions

1. Press [SBR] [CLR] to initialize program; 20, is displayed. Press [2nd] [Fix] 9 to remove a fixed decimal format.

2. A telephone-pad entry is used to enter all characters one at a time.

STU 7	VWX 8	YZ– 9
JKL 4	MNO 5	PQR 6
ABC 1	DEF 2	GHI 3
,.? 0		

For characters other than numbers, find the character on the above chart and enter the number beneath it into the display. Then press an appropriate user-defined key as explained below.

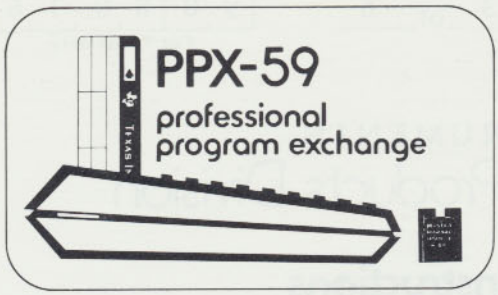
* Press [A] if the character is to the left of the number
* Press [B] if the character is centered above the number
* Press [C] if the character is to the right of the number

For numbers, enter single-digit integers into the display and press [D].

To skip a space or leave a blank, simply press [E]

3. After a character is entered a number appears in the display indicating the number of entries that may still be made before filling the line. Once the line is filled it is automatically printed and a new line is begun. If you wish to begin a new line before filling the old one, or if your message is completed, simply press [2nd] [A'].

4. Once your message is entered you may record it on magnetic cards following the instructions found in your Owner's Manual if you own a TI Programmable 59.



9,0 8,0 1,6
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TEXAS INSTRUMENTS
Calculator Products Division

Sample Problem

Statement of Example

Use this program to write "HAPPY PROGRAMMING"

☐ See Continuation Sheet

ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT
	SBR CLR	20	Initialize
	E	19	Space
3	B	18	H
1	A	17	A
6	A	16	P
6	A	15	P
9	A	14	Y
	E	13	Space
6	A	12	P
6	C	11	R
5	C	10	O
3	A	9	G
6	C	8	R
1	A	7	A
5	A	6	M
5	A	5	M
3	C	4	I
5	B	3	N
3	A	2	G
	2nd A'	20	
		(HAPPY PROGRAMMING)*	

Modes: (n)• —Printed only (n)—Displayed Briefly (Pause)
n• —Printed and displayed

☐ Over

PPX-59 Professional Program Exchange

9,0|8,0,1,6
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LOC	CODE	KEY	COMMENTS
000	76	LBL	
001	11	A	
002	32	X↕T	
003	00	0	
004	67	EQ	
005	01	01	
006	06	06	
007	01	1	
008	61	GTO	
009	00	00	
010	30	30	
011	76	LBL	
012	12	B	
013	32	X↕T	
014	00	0	
015	67	EQ	
016	01	01	
017	11	11	
018	02	2	
019	61	GTO	
020	00	00	
021	30	30	
022	76	LBL	
023	13	C	
024	32	X↕T	
025	00	0	
026	67	EQ	
027	01	01	
028	16	16	
029	03	3	
030	53	(	
031	24	CE	
032	85	+	
033	03	3	
034	65	×	
035	53	(	
036	32	X↕T	
037	75	-	
038	01	1	
039	54	)	
040	54	)	
041	32	X↕T	
042	05	5	
043	77	GE	
044	00	00	
045	81	81	
046	01	1	
047	02	2	
048	77	GE	
049	00	00	
050	86	86	
051	02	2	
052	00	0	
053	77	GE	
054	00	00	
055	91	91	
056	02	2	
057	06	6	
058	77	GE	
059	00	00	
060	96	96	
061	02	2	
062	00	0	
063	61	GTO	
064	01	01	
065	24	24	
066	76	LBL	
067	14	D	
068	32	X↕T	
069	06	6	
070	77	GE	
071	00	00	
072	77	77	
073	03	3	
074	61	GTO	
075	00	00	
076	98	98	
077	01	1	
078	61	GTO	
079	00	00	
080	98	98	
081	01	1	
082	02	2	
083	61	GTO	
084	00	00	
085	98	98	
086	01	1	
087	05	5	
088	61	GTO	
089	00	00	
090	98	98	
091	01	1	
092	07	7	
093	61	GTO	
094	00	00	
095	98	98	
096	02	2	
097	00	0	
098	53	(	
099	24	CE	
100	85	+	
101	32	X↕T	
102	54	)	
103	61	GTO	
104	01	01	
105	24	24	
106	05	5	
107	07	7	
108	61	GTO	
109	01	01	
110	24	24	
111	04	4	
112	00	0	
113	61	GTO	
114	01	01	
115	24	24	
116	07	7	
117	01	1	
118	61	GTO	
119	01	01	
120	24	24	
121	76	LBL	
122	15	E	
123	00	0	
124	32	X↕T	
125	01	1	
126	00	0	
127	00	0	
128	49	PRD	
129	01	01	
130	32	X↕T	
131	44	SUM	
132	01	01	
133	43	RCL	
134	01	01	
135	97	DSZ	
136	03	03	
137	01	01	
138	49	49	
139	69	OP	
140	20	20	
141	72	ST*	
142	00	00	
143	05	5	
144	42	STO	
145	03	03	
146	00	0	
147	42	STO	
148	01	01	
149	29	CP	
150	69	OP	
151	32	32	
152	43	RCL	
153	02	02	
154	22	INV	
155	67	EQ	
156	01	01	
157	76	76	
158	87	IFF	
159	01	01	
160	01	01	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

PPX-59 Professional Program Exchange

9 0 8 0 1 6
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LOC	CODE	KEY	COMMENTS
161	69	DP	
162	43	RCL	
163	00	00	
164	42	STO	
165	03	03	
166	71	SBR	
167	01	01	
168	77	GE	
169	05	5	
170	42	STO	
171	03	03	
172	02	2	
173	00	0	
174	42	STO	
175	02	02	
176	92	RTN	
177	04	4	
178	42	STO	
179	01	01	
180	73	RC*	
181	03	03	
182	84	DP*	
183	01	01	
184	69	DP	
185	33	X2	
186	97	DSZ	
187	01	01	
188	01	01	
189	80	80	
190	69	DP	
191	05	05	
192	69	DP	
193	00	00	
194	92	RTN	
195	76	LBL	
196	16	A'	
197	43	RCL	
198	03	03	
199	32	X:T	
200	05	5	
201	67	EQ	
202	02	02	
203	24	24	
204	69	DP	
205	20	20	
206	02	2	
207	49	PRD	
208	03	03	
209	53	(	
210	43	RCL	
211	03	03	
212	22	INV	
213	28	LOG	
214	52	EE	
215	22	INV	

LOC	CODE	KEY	COMMENTS
216	52	EE	
217	65	×	
218	00	0	
219	48	EXC	
220	01	01	
221	54	)	
222	72	ST*	
223	00	00	
224	53	(	
225	43	RCL	
226	02	02	
227	55	÷	
228	05	5	
229	54	)	
230	59	INT	
231	44	SUM	
232	00	00	
233	61	GTO	
234	01	01	
235	58	58	
236	76	LBL	
237	17	B'	
238	03	3	
239	42	STO	
240	03	03	
241	43	RCL	
242	00	00	
243	32	X:T	
244	04	4	
245	44	SUM	
246	03	03	
247	71	SBR	
248	01	01	
249	77	GE	
250	04	4	
251	44	SUM	
252	03	03	
253	43	RCL	
254	03	03	
255	22	INV	
256	67	EQ	
257	02	02	
258	44	44	
259	05	5	
260	42	STO	
261	03	03	
262	00	0	
263	92	RTN	
264	76	LBL	
265	19	D'	
266	53	(	
267	53	(	
268	24	CE	
269	65	×	
270	04	4	

LOC	CODE	KEY	COMMENTS
271	75	-	
272	01	1	
273	54	)	
274	42	STO	
275	03	03	
276	85	+	
277	04	4	
278	54	)	
279	61	GTO	
280	02	02	
281	43	43	
282	76	LBL	
283	25	CLR	
284	47	CMS	
285	22	INV	
286	86	STF	
287	01	01	
288	01	1	
289	76	LBL	
290	18	C'	
291	53	(	
292	24	CE	
293	65	×	
294	04	4	
295	75	-	
296	01	1	
297	54	)	
298	42	STO	
299	00	00	
300	00	0	
301	42	STO	
302	01	01	
303	61	GTO	
304	01	01	
305	69	DP	

MERGED CODES

62 Pgm Ind	72 STO Ind	83 GTO Ind
63 Exc Ind	73 RCL Ind	84 Op Ind
64 Prd Ind	74 SUM Ind	92 INV SBR

PRINTER UTILITY

- **ALPHA PRINTING CLOCK**
  Prints hours and minutes at 1 minute intervals (i.e., "twelve seventeen, twelve eighteen . . ."). Can be calibrated to allow for calculator differences.
  PC-100A/C required. TI-59 only.

- **FLAG TESTER**
  Checks the settings of the ten flags.
  TI-59 only.

- **CARTESIAN GRAPH**
  Graphs ordered pairs of the form X, Y providing X and Y are both positive integers between 1 and 9 inclusive. Twenty ordered pairs can be graphed.
  PC-100A/C required. TI-59 only.

- **FUNCTION PLOTTER FOR TI-59**
  Plots a user defined function over a specified interval of the independent variable. Twenty print positions are possible.
  PC-100A/C required. TI-59 only.

- **BAR GRAPH PLOTTER**
  Plots the values contained in registers 1-20 in bar graph format. The maximum value can be set by the user or the graph can be scaled automatically to the largest value in registers 1-20.
  PC-100A/C required. TI-59 only.

- **ALPHANUMERIC REGISTER LISTING**
  Provides a list of the register contents and their alphanumeric equivalents.
  PC-100A/C required. TI-59 only.

- **TI-59 BANNER PROGRAM**
  Uses a matrix to print letters of the alphabet.
  PC-100A/C required. TI-59 only.

- **MEMO PAD**
  Use your calculator to write messages as on a typewriter.
  PC-100A/C required. TI-59 only.

PREPROGRAMMED MAGNETIC CARDS ARE NOT INCLUDED.
(The program Code Lists must be keyed into blank magnetic cards.)

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