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For TI use onlyTEXAS INSTRUMENTS
Calculator Products Division

Submission Abstract

Program Title	ROMAN NUMERALS	Rev.
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Abstract of Program

This program converts numbers to or from Roman numerals.

User Benefits:

Reduces errors
Eliminates need to remember symbols and conversion rules

Category Number	36	Required Progs.	Prog. Steps	291	PC-100A Needed <input checked="" type="checkbox"/>	Library Module ID <input type="checkbox"/>
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Submittal Agreement

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Signature Dix Fulton Date April 1978
Name Dix Fulton Tel. No. _____
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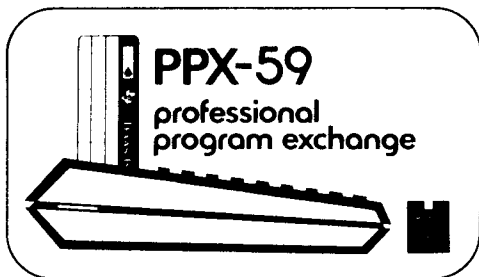
Submission Checklist

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

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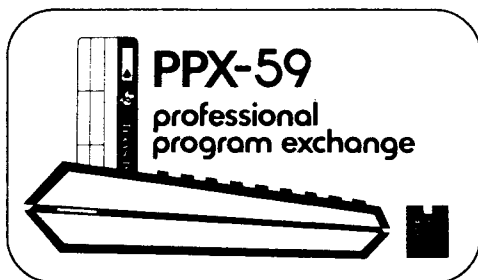
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Program Description

Program Title:	ROMAN NUMERALS	Rev.
Method, Equations, Sketches, Limitations, References, Error Recovery:		
<p>Numbers to be converted to Roman numerals should lie in the range between 1 and 3999, inclusive.</p> <p>The conversion from Roman numerals is performed anew after each character entry. The printer is not required for this conversion.</p>		
<input type="checkbox"/> See Continuation Sheet		



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Sample Problem

Statement of Example

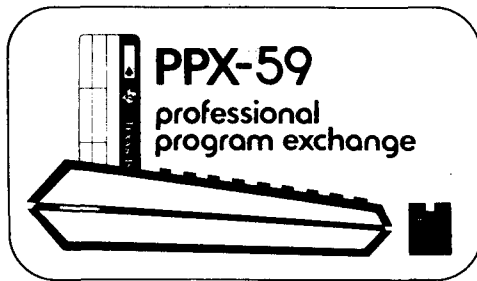
1. Convert 1978 to Roman numerals.
2. What is MMMDCCXCIV ?

☐ See Continuation Sheet

ENTER	PRESS	OUTPUT/MODE (see legend below)	COMMENT
1978	C'	1978 = MCMLXXVIII *	Example no. 1
	E'		Initialize Example no. 2
	A'	(1000)*	M
	A'	(2000)*	MM
	A'	(3000)*	MMM
	B'	(3500)*	MMMD
	A	(3600)*	MMMD C
	A	(3700)*	MMMD CC
	C	(3710)*	MMMD CC X
	A	(3790)*	MMMD CC XC
	E	(3791)*	MMMD CC XC I
	D	(3794)*	MMMD CC XC IV

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

☐ Over



User Instructions

Program Title					ROMAN NUMERALS	
M	D	→	ROM		INIT	
C	L		X	V	I	

Partition (OP 17)		Parentheses Levels	
<u>479 , 59</u>	<u>1</u>	t Register	<input checked="" type="checkbox"/>
Angular Mode (if applicable)	SBR Levels	Absolute Addresses	<input type="checkbox"/>
<u> </u>	<u>1</u>		
Library Module ID		Disturbs Pending Operations	<input checked="" type="checkbox"/>
<u> </u>			

LABELS (Op 08)									
INV	lnx	CE	CLR	x ²	x ²				
√x	1/x	STO	X	RCL	X	SUM	y ^x		
EE	()	÷	GTO	X				
SBR	-	RST	+	R/S	.				
+/-	=	CLR	INV	00	CP				
Exp	Pgm	P-R	0	X	01	X	DMs		
Exp X	P-R X	x	Exp	P-R	02	X	DMs		
GE	Pause	x-1	N1	03	04	05	DMs		
10	x-1	x+1	X	x	X	06	DMs		
100	DMs	π	101	X	Write	DMs			
Acc	P-R	X							

USER DEFINED KEYS	
A	Enter C
B	Enter L
C	Enter X
D	Enter V
E	Enter I
A'	Enter M
B'	Enter D
C'	Arabic → Roman
D'	incr.print buffer
E'	initialize

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

STEP	PROCEDURE	ENTER	PRESS			OUTPUT/MODE (see legend below)	DATA REGISTERS (INV)
1	To convert an Arabic number to Roman numerals	n < 4000	C'			Roman numerals *	0 current entry 1 last entry; I.V 2 total; X.L 3 C.D 4 M.? 5 text 6 letter place 7 print repetition 8 place counter 9 Op* 10 input residual
2a	To convert Roman numerals to Arabic number, first initialize; then...		E'			0.	1 2 3 4 5 6 7 8 9
2b	Press the corresponding user-defined key for each character, in order,					(accumulated Roman number)*	
	M		A'				
	D		B'				
	C		A				
	L		B				
	X		C				
	V		D				
	I		E				

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

(n)* — Printed and displayed

□ See Continuation Sheet

☐ See Continuation Sheet

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For T1 use only

LOC	CODE	KEY	COMMENTS	LOC	CODE	KEY	COMMENTS	LOC	CODE	KEY	COMMENTS
000	48	EXC		055	76	LBL		110	95	=	
001	00	00		056	13	C		111	59	INT	
002	43	STD		057	04	4		112	42	STD	
003	01	01		058	04	4		113	08	08	
004	32	X+T		059	32	X+T		114	02	2	
005	71	SBR		060	01	1		115	04	4	
006	99	PRT		061	00	0		116	93	.	
007	69	DP		062	81	RST		117	04	4	
008	05	05		063	76	LBL		118	02	2	
009	43	RCL		064	14	D		119	42	STD	
010	00	00		065	04	4		120	01	01	
011	44	SUM		066	02	2		121	04	4	
012	02	02		067	32	X+T		122	04	4	
013	32	X+T		068	05	5		123	93	.	
014	77	GE		069	81	RST		124	02	2	
015	79	X		070	76	LBL		125	07	STD	
016	65	X		071	15	E		126	42	02	
017	02	2		072	02	2		127	02	02	
018	95	=		073	04	4		128	01	1	
019	22	INV		074	32	X+T		129	05	5	
020	44	SUM		075	01	1		130	93	.	
021	02	02		076	81	RST		131	01	1	
022	76	LBL		077	76	LBL		132	06	6	
023	79	X		078	17	B		133	42	STD	
024	43	RCL		079	01	1		134	03	03	
025	99	PRT		080	06	6		135	03	3	
026	99	PRT		081	32	X+T		136	00	0	
027	91	R/S		082	05	5		137	93	.	
028	76	LBL		083	00	0		138	07	7	
029	16	R		084	00	0		139	01	1	
030	00	0		085	81	RST		140	42	STD	
031	00	0		086	76	LBL		141	04	04	
032	32	X+T		087	18	C		142	26	LBL	
033	01	1		088	32	X+T		143	39	CDS	
034	00	0		089	10	E		144	01	1	
035	00	0		090	06	6		145	25	RCL	
036	00	0		091	04	4		146	43	08	
037	81	RST		092	00	0		147	08	=	
038	76	LBL		093	00	0		148	95	INV	
039	11	R		094	00	0		149	23	LOG	
040	01	1		095	00	0		150	23	EE	
041	05	5		096	00	0		151	52	EE	
042	32	X+T		097	00	0		152	23	INV	
043	01	1		098	69	DP		153	52	EE	
044	00	0		099	04	04		154	65	X	
045	00	0		100	32	X+T		155	43	RCL	
046	81	RST		101	69	DP		156	10	10	
047	76	LBL		102	06	06		157	95	=	
048	12	2		103	69	DP		158	59	INT	
049	02	2		104	00	00		159			
050	07	7		105	42	STD					
051	32	X+T		106	10	10					
052	05	5		107	28	LOG					
053	00	0		108	85	+					
054	81	RST		109	01	1					

MERGED CODES

62 Pgm Ind 72 STO Ind 83 GRO Ind
63 Acc Ind 73 RCL Ind 84 Op Ind
64 Pa Ind 74 SUM Ind 92 INV SBR

PPX-59 Professional Program Exchange

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For TI use only

LOC	CODE	KEY	COMMENTS	LOC	CODE	KEY	COMMENTS	LOC	CODE	KEY	COMMENTS
160	55	÷		215	43	RCL		270	02	*	
161	32	X:T		216	97	DSZ		271	75	-	
162	95	=		217	07	07		272	02	2	
163	22	INV		218	38	SIN		273	54)	
164	44	SUM		219	76	LBL		274	22	INV	
165	10	10		220	90	LST		275	28	LOG	
166	03	3		221	97	DSZ		276	95	=	
167	77	GE		222	08	08		277	52	EE	
168	49	PRD		223	39	CDS		278	22	INV	
169	04	4		224	69	DP		279	52	EE	
170	77	GE		225	05	05		280	44	SUM	
171	42	STD		226	76	LBL		281	05	05	
172	08	8		227	10	E'		282	43	RCL	
173	77	GE		228	69	DP		283	05	05	
174	48	EXC		229	00	00		284	84	DP*	
175	71	SBR		230	47	CMS		285	09	09	
176	43	RCL		231	98	ADV		286	97	DSZ	
177	69	DP		232	76	LBL		287	06	06	
178	28	28		233	19	D'		288	78	Σ+	
179	71	SBR		234	69	DP		289	61	GTO	
180	43	RCL		235	29	29		290	19	D'	
181	69	DP		236	05	5		291	00	0	
182	38	38		237	42	STD		292	00	0	
183	61	GTO		238	06	06		293	00	0	
184	90	LST		239	25	CLR		294	00	0	
185	76	LBL		240	42	STD		295	00	0	
186	48	EXC		241	05	05		296	00	0	
187	71	SBR		242	76	LBL		297	00	0	
188	59	INT		243	78	Σ+		298	00	0	
189	32	X:T		244	92	RTN		299	00	0	
190	75	-		245	76	LBL		300	00	0	
191	05	5		246	43	RCL		301	00	0	
192	95	=		247	73	RC*		302	00	0	
193	32	X:T		248	08	08		303	00	0	
194	61	GTO		249	59	INT		304	00	0	
195	49	PRD		250	61	GTO		305	00	0	
196	76	LBL		251	99	PRT		306	00	0	
197	42	STD		252	76	LBL		307	00	0	
198	71	SBR		253	59	INT		308	00	0	
199	43	RCL		254	73	RC*		309	00	0	
200	71	SBR		255	08	08		310	00	0	
201	59	INT		256	22	INV		311	00	0	
202	61	GTO		257	59	INT		312	00	0	
203	90	LST		258	65	*		313	00	0	
204	76	LBL		259	01	1		314	00	0	
205	49	PRD		260	00	0		315	00	0	
206	00	0		261	00	0		316	00	0	
207	67	EQ		262	95	=		317	00	0	
208	90	LST		263	76	LBL		318	00	0	
209	32	X:T		264	99	PRT		319	00	0	
210	42	STD		265	65	*					
211	07	07		266	53	(
212	76	LBL		267	43	RCL					
213	38	SIN		268	06	06					
214	71	SBR		269	65	*					

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