



50145 Program Description I

Program Title MAGIC SQUARESContributor's Name ITO BUDAAddress VIA S. VITO N° 5City TRIESTECountry ITALYPostal Code 34100

Program Description, Equations, Variables

GIVEN THE ORDER OF ANY SQUARE YOU CAN BUILD A
MATRIX IN WHICH THE SUM OF THE NUMBERS OF ANY LINE
COLUMN AND DIAGONAL IS EQUAL TO $\frac{N^3+N}{2}$

CARD 1 : ODD AND DOUBLE EVEN ORDER (3,5,7 ETC. AND 4,8,12 ETC.)

CARD 2 : SIMPLY EVEN ORDER (6,10,14 ETC.)

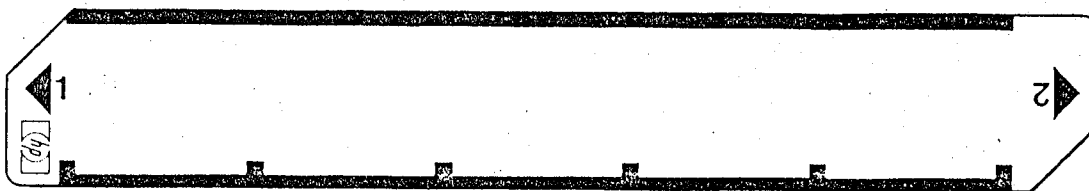
Operating Limits and Warnings

This program has been verified only with respect to the numerical example given in *Program Description II*. User accepts and uses this program material AT HIS OWN RISK, in reliance solely upon his own inspection of the program material and without reliance upon any representation or description concerning the program material.

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3 → A			N=4			4 → A			N=6 → A		
N=3			PRESS B			PRESS A			PRESS A		
1.00000	***					1.00000	***		1.00000	***	
1.00200	***					1.00400	***		6.00600	***	
	R/S					1.00600	***		35.00800	***	
2.00000	***								6.00100	***	
7.00100	***					1.00400	***		31.00000	***	
	R/S					4.00000	***		1.00500	***	
3.00000	***					4.00100	***		6.00000	***	
2.00300	***					3.00000	***		2.00200	***	
	R/S					2.00200	***		9.00000	***	
4.00000	***					6.00000	***		5.00500	***	
1.00200	***					3.00300	***		29.00000	***	
	fa					11.00000	***		5.00200	***	
3.00300	***								16.00000	***	
						2.00300	***		2.00500	***	
5.00000	***					7.00000	***		11.00000	***	
3.00200	***								3.00300	***	
	R/S								15.00000	***	
6.00000	***								4.00400	***	
1.00100	***								22.00000	***	
	R/S								4.00300	***	
7.00000	***								21.00000	***	
3.00300	***								3.00400	***	
	fa								16.00000	***	
2.00100	***								3.00100	***	
									13.00000	***	
8.00000	***								4.00100	***	
1.00300	***								19.00000	***	
	R/S								6.00200	***	
0.00000	***								32.00000	***	
									1.00200	***	
									2.00000	***	
									5.00300	***	
									27.00000	***	
									3.00300	***	
									9.00000	***	
									2.00600	***	
									12.00000	***	
									2.00100	***	
									7.00000	***	
									3.00500	***	
									17.00000	***	
									3.00200	***	
									14.00000	***	
									0.00400	***	

Reference(s)

[illegible]

Program Listing I

STEP	KEY ENTRY	KEY CODE	COMMENTS	STEP	KEY ENTRY	KEY CODE	COMMENTS
001	*LBLA	21 11		057	GT05	22 05	
002	CLRG	16-53		058	GT06	22 06	
003	DSP5	-63 05		059	*LBL5	21 05	
004	ST00	35 00		060	1	01	
005	1	01		061	ST03	35 03	
006	+	-55		062	GT07	22 07	
007	2	02		063	*LBL6	21 06	
008	-	-24		064	1	01	
009	ST03	35 03		065	ST+3	35-55 03	
010	1	01		066	*LBL7	21 07	
011	ST02	35 02		067	RCL2	36 02	
012	ST01	35 01		068	RCL3	36 03	
013	PRTX	-14		069	GSB0	23 00	
014	RCL2	36 02		070	SPC	16-11	
015	RCL3	36 03		071	*LBL8	21 08	
016	GSB0	23 00		072	1	01	
017	SPC	16-11		073	ST+1	35-55 01	
018	R/S	51		074	RCL1	36 01	
019	2	02		075	PRTX	-14	
020	ST01	35 01		076	GT01	22 01	
021	PRTX	-14		077	RTN	24	
022	*LBL1	21 01		078	*LBLB	21 12	
023	1	01		079	CLRG	16-53	
024	ST-2	35-45 02		080	ST00	35 00	
025	ST-3	35-45 03		081	DSP5	-63 05	
026	RCL2	36 02		082	1	01	
027	X=0?	16-43		083	ST05	35 05	
028	RCL0	36 00		084	ST02	35 02	
029	ST02	35 02		085	*LBL9	21 09	
030	RCL3	36 03		086	1	01	
031	X=0?	16-43		087	ST06	35 06	
032	RCL0	36 00		088	*LBL6	21 16 12	
033	ST03	35 03		089	RCL6	36 06	
034	RCL2	36 02		090	RCL2	36 02	
035	RCL3	36 03		091	+	-55	
036	GSB0	23 00		092	1	01	
037	SPC	16-11		093	-	-45	
038	R/S	51		094	ST07	35 07	
039	GT08	22 08		095	RCL0	36 00	
040	*LBLA	21 16 11		096	RCL7	36 07	
041	RCL0	36 00		097	-	-45	
042	RCL2	36 02		098	1	01	
043	X=Y?	16-33		099	+	-55	
044	GT02	22 02		100	ST03	35 03	
045	GT03	22 03		101	RCL5	36 05	
046	*LBL2	21 02		102	ST01	35 01	
047	2	02		103	*LBLc	21 16 13	
048	ST02	35 02		104	RCL0	36 00	
049	GT04	22 04		105	RCL1	36 01	
050	*LBL3	21 03		106	-	-45	
051	2	02		107	1	01	
052	ST+2	35-55 02		108	+	-55	
053	*LBL4	21 04		109	ST08	35 08	
054	RCL0	36 00		110	RCL7	36 07	
055	RCL3	36 03		111	RCL1	36 01	
056	X=Y?	16-33		112	GSBC	23 13	

REGISTERS

0	1	2	3	4	5	6	7	8	9
S0	S1	S2	S3	S4	S5	S6	S7	S8	S9
A	B	C	D	E	F	G	H	I	J



Program Listing II

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STEP	KEY ENTRY	KEY CODE	COMMENTS	STEP	KEY ENTRY	KEY CODE	COMMENTS
113	RCL3	36 03		168	3	03	
114	PCL8	36 08		169	=	-24	
115	GSBC	23 13		170	+	-55	
116	SPC	16-11		171	PRTX	-14	
117	RCL7	36 07		172	INT	16 34	
118	RCL8	36 08		173	STOA	35 11	
119	GSBC	23 13		174	LSTX	16-63	
120	120 RCL3	36 03		175	FRC	16 44	
121	RCL1	36 01		176	STOB	35 12	
122	GSBC	23 13		177	RCLB	36 12	
123	SPC	16-11		178	EEX	-23	
124	1	01		179	3	03	
125	ST+1	35-55 01		180	x	-35	
126	RCL0	36 00		181	STOB	35 12	
127	4	04		182	RCLH	36 11	
128	=	-24		183	RCL0	36 00	
129	1	01		184	x	-35	
130	130 -	-45		185	RCL0	36 00	
131	RCL5	36 05		186	-	-45	
132	+	-55		187	RCLB	36 12	
133	RCL1	36 01		188	+	-55	
134	X&Y?	16-35		189	PRTX	-14	
135	GT00	22 16 13		190	RTN	24	
136	1	01		191	R/S	51	
137	ST+6	35-55 06					
138	RCL0	36 00					
139	4	04					
140	140 =	-24					
141	RCL6	36 06					
142	X&Y?	16-35					
143	GT00	22 16 12					
144	RCL1	36 01		200			
145	ST05	35 05					
146	RCL0	36 00					
147	4	04					
148	=	-24					
149	RCL2	36 02					
150	150 +	-55					
151	ST02	35 02					
152	RCL0	36 00					
153	2	02					
154	=	-24		210			
155	RCL2	36 02					
156	X&Y?	16-35					
157	GT09	22 09					
158	RTN	24					
159	*LBL0	21 00					
160	EEX	-23					
161	3	03					
162	=	-24					
163	+	-55					
164	PRTX	-14		220			
165	RTN	24					
166	*LSLC	21 13					
167	EEX	-23					

LABELS					FLAGS	SET STATUS		
A	B	C	D	E	0	FLAGS	TRIG	DISP
a	b	c	d	e	1	ON OFF		
0	1	2	3	4	2	0 ☐ ☐	DEG ☐	FIX ☐
						1 ☐ ☐	GRAD ☐	SCI ☐
						2 ☐ ☐	RAD ☐	ENG ☐
5	6	7	8	9	3	3 ☐ ☐		n _____

STEP	KEY ENTRY	KEY CODE	COMMENTS	STEP	KEY ENTRY	KEY CODE	COMMENTS
001	*LBLA	21 11		057	RCL3	36 03	
002	CLRG	16-53		058	XZY?	16-35	
003	DSP5	-63 05		059	GT02	22 02	
004	ST00	35 00		060	1	01	
005	2	02		061	ST+2	35-55 02	
006	=	-24		062	GSB7	23 07	
007	1	01		063	RCL2	36 02	
008	-	-45		064	XZY?	16-35	
009	2	02		065	GT01	22 01	
010	=	-24		066	GSB7	23 07	
011	ST01	35 01		067	ST0B	35 12	
012	1	01		068	1	01	
013	ST02	35 02		069	GSB8	23 08	
014	*LBL1	21 01		070	RCL5	36 12	
015	RCL2	36 02		071	1	01	
016	ST03	35 03		072	+	-55	
017	*LBL2	21 02		073	1	01	
018	RCL3	36 03		074	GSB8	23 08	
019	ST04	35 04		075	SPC	16-11	
020	RCL0	36 00		076	2	02	
021	RCL2	36 02		077	ST03	35 03	
022	GSB6	23 06		078	*LBL4	21 04	
023	ST05	35 05		079	RCL0	36 00	
024	GSB7	23 07		080	RCL3	36 03	
025	RCL3	36 03		081	-	-45	
026	XZY?	16-35		082	2	02	
027	GT03	22 03		083	+	-55	
028	XZY	-41		084	RCL3	36 03	
029	-	-45		085	GSB8	23 08	
030	ST04	35 04		086	RCL3	36 03	
031	*LBL3	21 03		087	1	01	
032	RCL0	36 00		088	-	-45	
033	RCL4	36 04		089	RCL3	36 03	
034	GSB6	23 06		090	GSB8	23 08	
035	ST06	35 06		091	SPC	16-11	
036	RCL4	36 04		092	1	01	
037	RCL2	36 02		093	ST+3	35-55 03	
038	GSB8	23 08		094	GSB7	23 07	
039	RCL6	36 06		095	RCL3	36 03	
040	RCL5	36 05		096	XZY?	16-35	
041	GSB8	23 08		097	GT04	22 04	
042	SPC	16-11		098	GSB7	23 07	
043	RCL6	36 06		099	1	01	
044	RCL2	36 02		100	-	-45	
045	GSB8	23 08		101	ST0A	35 11	
046	RCL4	36 04		102	RCL0	36 00	
047	RCL5	36 05		103	GSB8	23 08	
048	GSB8	23 08		104	RCLA	36 11	
049	SPC	16-11		105	1	01	
050	1	01		106	GSB8	23 08	
051	ST+3	35-55 03		107	SPC	16-11	
052	RCL1	36 01		108	GSB7	23 07	
053	RCL2	36 02		109	ST0A	35 11	
054	+	-55		110	RCL0	36 00	
055	1	01		111	1	01	
056	-	-45		112	-	-45	

REGISTERS

0	1	2	3	4	5	6	7	8	9
S0	S1	S2	S3	S4	S5	S6	S7	S8	S9
A	B	C	D	E	I				

STEP	KEY ENTRY	KEY CODE	COMMENTS	STEP	KEY ENTRY	KEY CODE	COMMENTS
113	GSEB	23 08		168	RCL7	36 07	
114	RCLA	36 11		169	RCL0	36 00	
115	2	02		170	x	-35	
116	GSEB	23 08		171	RCL0	36 00	
117	SPC	16-11		172	-	-45	
118	3	03		173	RCL6	36 08	
119	ST03	35 03		174	+	-55	
120	*LBL5	21 05		175	PRTX	-14	
121	RCL3	36 03		176	RTN	24	
122	2	02		177	R/S	51	
123	-	-45					
124	ST04	35 11		180			
125	RCL0	36 00					
126	RCL3	36 03					
127	-	-45					
128	1	01					
129	+	-55					
130	GSEB	23 08					
131	RCLA	36 11					
132	RCL3	36 03					
133	GSEB	23 08					
134	SPC	16-11		190			
135	1	01					
136	ST+3	35-55 03					
137	GSEB	23 07					
138	RCL3	36 03					
139	X4Y?	16-35					
140	GT05	22 05					
141	RTN	24					
142	*LBL6	21 06					
143	-	-45					
144	1	01		200			
145	+	-55					
146	RTN	24					
147	*LBL7	21 07					
148	RCL0	36 00					
149	2	02					
150	=	-24					
151	RTN	24					
152	*LBL8	21 08					
153	EEX	-23					
154	3	03		210			
155	=	-24					
156	+	-55					
157	PRTX	-14					
158	INT	16 34					
159	ST07	35 07					
160	LSTX	16-63					
161	FRC	16 44					
162	ST08	35 08					
163	RCL8	36 08					
164	EEX	-23		220			
165	3	03					
166	x	-35					
167	ST08	35 08					

LABELS					FLAGS	SET STATUS		
A	B	C	D	E	0	FLAGS		
a	b	c	d	e	1	ON OFF		
0	1	2	3	4	2	0	DEG	FIX
5	6	7	8	9	3	1	GRAD	SCI
						2	RAD	ENG