

Magic Square

Magic Square

n				

M A G I C S Q U A R E

Calculates and prints the magic square of side n

Input n (2 < n < 8) then key A

Magic
Square



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// ##### MAGIC SQUARE #####
LBL A
CMS
X/T 2
GE 1/X 8 X/T
GE 1/X STO 96 X2 STO 98 - ( RCL 96 / 2 ) INT =
STO 97 OP 59
SBR SQR SBR X2 SBR SQR ADV
GTO DEG
LBL COS
CP RCL 97 / RCL 96 =
INV INT
EQ SIN RCL 96 SUM 97
LBL SIN
1 SUM 97 RCL 97 X/T RCL 98
GE TAN INV SUM 97 RCL 97 X/T RCL 98
GE TAN 1 STO 97
LBL TAN
CP RC* 97
EQ DEG RCL 99 - RCL 96 =
STO 97 X/T
INV GE DEG
RCL 98 SUM 97
LBL DEG
RCL 97 STO 99 OP 20
RCL 00 ST* 97 X/T RCL 98
INV EQ COS
CLR
STO 00 STO 99

// ##### SEARCH DATAS #####
LBL GRD
RCL 96 STO 95 RCL 96 * RCL 95 =
STO 98
LBL LNX
. 8 6 2 STO 55 STO 58 . 6 4 STO 56 . 8 4 2 STO 57 RCL 96 STO 94 0
STO 90 STO 00 STO 51 STO 52 STO 53 STO 54
LBL RAD
RC* 98 / 1 0 =
STO 92 INT INV SUM 92 SBR LOG STO 93 OP 20
SBR YX RCL 92 * 1 0 =
SBR LOG STO 93 OP 20
SBR YX 1 INV SUM 98
DSZ 94 RAD

// ##### PRINT #####
OP 00
RCL 51 OP 01
RCL 52 OP 02
RCL 53 OP 03
RCL 54 OP 04
OP 05
ADV
DSZ 95 LNX
SBR SQR RCL 96 STO 00
LBL DMS
RC* 00 SUM 90
DSZ 00 DMS
OP 00

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3 7 3 2 3 7 OP 02
1 3 2 7 0 0 7 2 0 0 OP 03
OP 05
RCL 90 PRT SBR SQR
CLR
ADV
R/S

// ##### CONVERT TO PRINT CODE #####
LBL LOG
+ 1 =
/ 8 =
STO 85 INT STO 86 ( ( RCL 85 - RCL 86 ) * 8 ) + ( RCL 86 * 1 0 ) =
RTN

// ##### CONSTRUCT OP XX #####
LBL YX
RCL 00 - 1 =
/ 3 . 3 =
INT + 5 1 =
STO 87 + 4 =
STO 88 NOP RC* 88 INV INT * 1 0 =
ST* 88 INT X/T RCL 93 * X/T INV LOG =
SM* 87
RTN

// ##### PRINT TITLE #####
LBL X2
OP 00
3 0 1 3 OP 01
2 2 2 4 1 5 0 0 3 6 OP 02
3 4 4 1 1 3 3 5 1 7 OP 03
RCL 96 SBR LOG * 6 INV LOG =
OP 04
OP 05
RTN

// ##### PRINT LINE #####
LBL SQR
OP 00
2 0 2 0 2 0 2 0 2 0 OP 01
2 0 2 0 2 0 2 0 2 0 OP 02
2 0 2 0 2 0 2 0 2 0 OP 03
2 0 2 0 2 0 2 0 2 0 OP 04
OP 05
RTN

// ##### ERROR #####
LBL 1/X
OP 00
1 7 3 5 3 5 OP 03
3 2 3 5 0 0 7 3 0 0 OP 04
OP 55
R/S

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L A B E L S		
001	11	A
039	39	COS
056	38	SIN
081	30	TAN
104	60	DEG
127	80	GRD
141	23	LNx
179	70	RAD
252	88	DMS
293	28	LOG
327	45	YX
374	33	X2
422	34	SQR
477	35	1/X

Adr	Branch.		
1/X	005	77	GE
1/X	009	77	GE
COS	119	67	EQ
DEG	036	61	GTO
DEG	085	67	EQ
DEG	097	77	GE
DMS	257	97	DSZ
LNx	242	97	DSZ
LOG	192	71	SBR
LOG	206	71	SBR
LOG	409	71	SBR
RAD	218	97	DSZ
SIN	049	67	EQ
SQR	029	71	SBR
SQR	033	71	SBR
SQR	245	71	SBR
SQR	287	71	SBR
TAN	065	77	GE
TAN	075	77	GE
X2	031	71	SBR
YX	198	71	SBR
YX	212	71	SBR

Reg.	Instr.		
00	111	43	RCL
	122	42	STO
	168	42	STO
	249	42	STO
	253	73	RC*
51	328	43	RCL
	170	42	STO
	223	43	RCL
52	172	42	STO
	227	43	RCL
53	174	42	STO
	231	43	RCL
54	176	42	STO
	235	43	RCL
55	146	42	STO
56	153	42	STO
57	159	42	STO
58	148	42	STO
	300	42	STO
85	307	43	RCL
	303	42	STO
	310	43	RCL
86	318	43	RCL
	343	42	STO
	370	74	SM*
87	348	42	STO
	351	73	RC*
	359	72	ST*
88	166	42	STO
	255	44	SUM
	284	43	RCL
90	186	42	STO
	190	44	SUM
	200	43	RCL
92	194	42	STO
	208	42	STO
	363	43	RCL



94	163 42 STO
95	130 42 STO 135 43 RCL
96	011 42 STO 018 43 RCL 044 43 RCL 051 43 RCL 090 43 RCL 128 43 RCL 132 43 RCL 161 43 RCL 247 43 RCL 407 43 RCL
97	025 42 STO 041 43 RCL 053 44 SUM 058 44 SUM 060 43 RCL 068 44 SUM 070 43 RCL 078 42 STO 083 73 RC* 093 42 STO 101 44 SUM 105 43 RCL 113 72 ST*
98	014 42 STO 063 43 RCL 073 43 RCL 099 43 RCL 116 43 RCL 138 42 STO 180 73 RC* 216 44 SUM
99	087 43 RCL 107 42 STO 124 42 STO

