

Program Description I

Program Title	TOSS and SCORE (GAME)		
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Program Description, Equations, Variables

With this program, you simulate the TOSS of four rings onto pegs (worth 25, 50, or 100 points).

The calculator then totals and displays your SCORE for that round. It will also keep track of your low, HIGH, and AVERAGE SCORES.

FORMULA FOR ORIGINAL SEED

$$\tan \left\{ \sin [S + \pi] \right\}^{\frac{1}{2}}$$

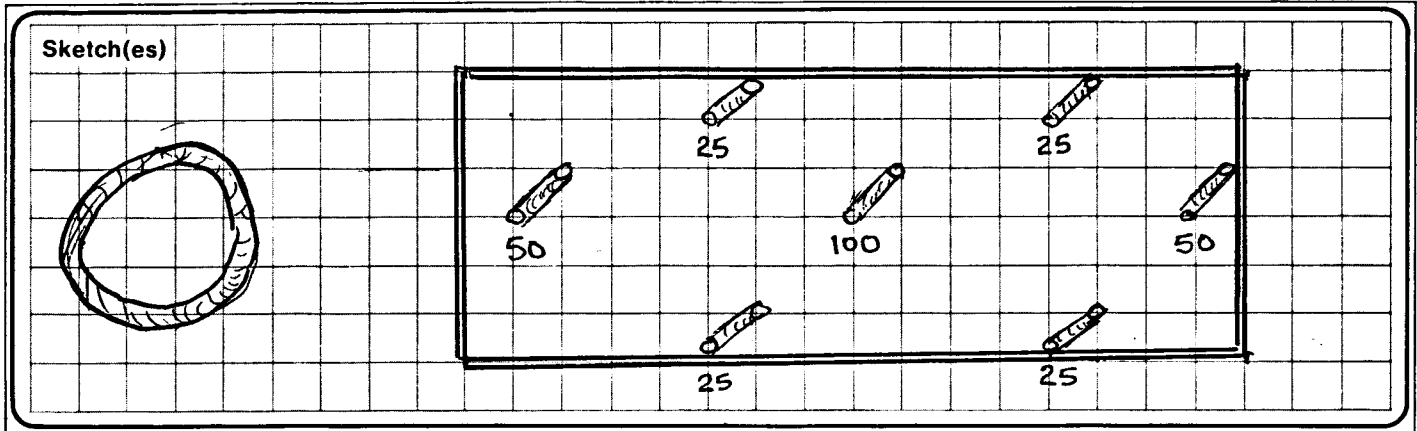
where S = seed input by user
or log. seed if $S > \pi$

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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Program Description II



Sample Problem(s) PLAY A SAMPLE GAME WITH EIGHT ROUNDS.

SEED .123456789 [f] [A] → 0.0

TOSS 1st RING [A] → 25. 2ND RING [B] → 25. 3RD RING [C] → 50.

4TH RING [D] → 25. POINTS SCORED [E] → 125.125*

2ND ROUND, [A] → 25. [B] → 0. [C] → 50. [D] → 0.

[E] → 75.125

3RD ROUND [A] → 0. [B] → 0. [C] → 25. [D] → 50.

[E] → 75.125

4TH ROUND [A] → 50. [B] → 25. [C] → 0. [D] → 50.

[E] → 125.125

5TH ROUND [A] → 25. [B] → 25. [C] → 25. [D] → 0.

[E] → 75.125

6TH ROUND [A] → 100. [B] → 100. [C] → 50. [D] → 50.

[E] → 300.300

7TH ROUND [A] → 0. [B] → 50. [C] → 50. [D] → 0.

[E] → 100.300

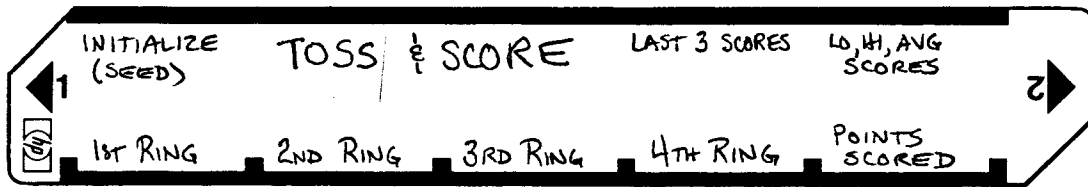
8TH ROUND [A] → 50. [B] → 100. [C] → 100. [D] → 50.

[E] → 300.300

LAST 3 SCORES [f] [D] → 300.0, 100.0, 300.0

Lo, H, AVG SCORES [f] [E] → 8., 75.0, 300.0, 146.88

Reference(s) * POINTS THIS ROUND. HIGH SCORE



STEP	INSTRUCTIONS	INPUT DATA/UNITS	KEYS	OUTPUT DATA/UNITS
1	Load PROGRAM — sides 1 and 2		<input type="checkbox"/> <input type="checkbox"/>	
2	INITIALIZE (INPUT A SEED: $0 < S < 1$)	SEED	f A	0.0
3	TOSS the FOUR RINGS onto the PEGS		<input type="checkbox"/> <input type="checkbox"/>	
	1ST RING		A *	POINTS
	2ND RING		B	POINTS
	3RD RING		C	POINTS
	4TH RING		D	POINTS
4	SCORE POINTS for that ROUND		E	SCORE **
5	FOR A NEW ROUND, <input type="checkbox"/> STEP 3		<input type="checkbox"/> <input type="checkbox"/>	
6	OPTIONAL: RECALL LAST 3 SCORES		f D	SCORE ₃ SCORE ₂ SCORE ₁
7	OPTIONAL: DISPLAY LOW, HIGH, and AVERAGE SCORES.		f E	# of ROUNDS LOW SCORE HIGH SCORE AVG. SCORE
	* If you press <input type="checkbox"/> or <input type="checkbox"/> or <input type="checkbox"/> or <input type="checkbox"/> TWO TIMES in succession, "ERROR" will be displayed.			
	** POINTS THIS ROUND. HIGH SCORE			

STEP	KEY ENTRY	KEY CODE	COMMENTS	STEP	KEY ENTRY	KEY CODE	COMMENTS
001 a	g LBL a	32 25 11	INITIALIZE	C'	f LBL C	31 25 13	Error
	h F? 3	35 71 03			GTO 9	22 09	
	h F? 3	35 71 03		D	f LBL D	31 25 14	TOSS 4TH RING
	GTO 9	22 09		060	f GSB O	31 25 00	
	h π	35 73			h RTN	35 22	
	h x ↔ y	35 52		D'	f LBL D	31 25 14	Error
	g x > y	32 81			GTO 9	22 09	
	f LOG	31 53		E	f LBL E	31 25 15	POINTS SCORED
	+	61			RCL D	34 14	
010	f SIN	31 62			STD C	33 13	STORE LAST 3 SCORES.
	f TAN	31 64			RCL E	34 15	R _D → R _C
	f √x	31 54			STD D	33 14	R _E → R _D
	f CL REG	31 43			RCL 5	34 05	R _S → R _E
	f P ↔ S	31 42		070	STD E	33 15	
	f CL REG	31 43			STD + 8	33 61 08	
	STD A	33 11			1	01	
	1	01			STD + 9	33 61 09	
	1	01			0	00	
	h STD I	35 33			STD 5	33 05	
020	2	02			STD 6	33 06	
	5	05	STORE CONSTANTS		RCL 3	34 03	
	STD (i)	33 24			f x = 0	31 51	STORE LOW SCORE
	STD 1	33 01		080	RCL E	34 15	
	STD 5	33 05			RCL E	34 15	
	STD 8	33 08			g x ≤ y	32 71	
	STD 9	33 09			STD 3	33 03	
	5	05			RCL 4	34 04	STORE HIGH SCORE
	0	00			RCL E	34 15	
	f DSZ	31 33			g x > y	32 81	
	STD (i)	33 24			STD 4	33 04	
	STD 3	33 03			RCL 4	34 04	
	STD 6	33 06			EEX	43	
	2	02			3	03	
	X	71		090	÷	81	
	STD 4	33 04			RCL E	34 15	
	STD 7	33 07			+	61	
	f P ↔ S	31 42			DSP 3	23 03	
	0	00			h CF 3	35 61 03	
	ENT ↑	41			h RTN	35 22	
040	ENT ↑	41		e	g LBL e	32 25 15	LOW, HIGH, AVG
	ENT ↑	41			DSPO	23 00	
	DSP 1	23 01			RCL 9	34 09	# of ROUNDS
	h RTN	35 22			h PAUSE	35 72	
A	f LBL A	31 25 11	TOSS 1st RING	100	DSP 1	23 01	
	f GSB O	31 22 00			RCL 3	34 03	LOW SCORE
	h RTN	35 22			h PAUSE	35 72	
A'	f LBL A	31 25 11	Error		RCL 4	34 04	HIGH SCORE
	GTO 9	22 09			h PAUSE	35 72	
B	f LBL B	31 25 12	TOSS 2ND RING		DSP 2	23 02	
050	f GSB O	31 22 00			RCL 8	34 08	
	h RTN	35 22			RCL 9	34 09	AVG. SCORE
B'	f LBL B	31 25 12	Error		÷	81	
	GTO 9	22 09			h RTN	35 22	
C	f LBL C	31 25 13	TOSS 3RD RING	110 d	g LBL d	32 25 14	LAST THREE SCORES
	f GSB O	31 22 00			DSP 1	23 01	
	h RTN	35 22			RCL C	34 13	

REGISTERS

0	50	1	25	2	0	3	LOW SCORE	4	HIGH SCORE	5	ROUND TOTAL	6	ZERO COUNTER	7		8	TOTAL POINTS	9	# of ROUNDS
S0	0	S1	25	S2	0	S3	50	S4	100	S5	25	S6	50	S7	100	S8	25	S9	25
A	SEED			B	C 2ND TO LAST SCORE			D	NEXT TO LAST SCORE			E	LAST SCORE		I	USED			

