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Program Description I

Program Title _____ *** SHOOTING GALLERY *** _____

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Program Description, Equations, Variables __Time to have some fun at the Penny Arcade. This _____ program is intended to simulate a shooting gallery game in the following manner:

After initialization, the display blinks either score (both "0" at the start) flashing like many arcade machines do between games. Pressing "A" while the display pauses, will take a quarter from you (deducts .25 from register 0) and pauses 5 seconds to show you what shot you're on. Next, a random number greater than 1, and less than 9999999999 (with all possible combinations in between) is displayed for one second. This is your target field. The actual digits themselves are unimportant. They are only there to confuse you. What you are looking for is the decimal point. You want to key in its numeric position (see next page for explaination on position numbering) as soon as possible. If you manage to key in the correct value while the "target" is still pausing on the display, you will receive 5 times the position value in points. If you miss that pause, the display will count down from 3 to 1. During each of those pauses, you can still key in position value, and will receive the displayed value times the point position added to your score. If you miss the pause "window" and accidently stop the program, key in the position you think is correct and press "C". You will receive the point position added to your score.

Should you fail to input a shot, or key in the wrong value, the machine takes a shot at you (scores a point), which is displayed as a negative value.

You win as long as the machine's score is less than 6 in which case, at the end of the game, the display will alternate flashing both scores. If you lose, only the machine's score is flashed. If you make over 200 points AND the machine's score is less than 6, you are entitled to a free game. The display is set to 9 places and the next pressing of "A" will not deduct 25¢ for the play.

You can recall the money "spent" by pressing "B" during a pause at the end of the game.

Operating Limits and Warnings __If any data is keyed in between games, be sure to clear flag__ 3 before proceeding with a new game.

Sketch(es) HOW TO DETERMINE THE POSITION OF THE DECIMAL POINT:

```
DISPLAY:         1 2 . 4 5 6 7 8 9 0 1
POSITION:        1 2 3 4 5 6 7 8 9 10 11
```

In the example above, the point is in position number 3.
(The decimal point can be in any position from 2 through 11).

Sample Problem(s) Enter program and initialize with a seed, (with 0<seed<1)

.2510637948 (seed example)	E	0.00 *
Start the game:	A	12. **
		8493.299700 *
The target show the point in position 5. Input:	5	25.00 *

Shown is your score, if you guessed correctly, for the
        shot just made.

	11. **
Shot 11 is now up.	9855597.000 *
A new target is displayed. Try the number 7 7	-1. *

Shown is the machines total score so far, if you guess
        wrong.

Etc.

*--denotes a one second pause.   **--denotes a 5 second pause.

Solution(s)

*** DISPLAY EXPLAINATION ***

The first number displayed in each round is the shot number (from 12 to 1)
which is the only number displayed with the flashing decimal point (to distinguish
it from the others). During this pause, the display is set to 0 places. The next
number displayed is the target field, with the display set to show all digits.
When you key in your answer, either the machine's total score is displayed (if you
guess wrong) with the display set to 0 places, and the number as a negative value,
or your points made for that last shot are displayed as two place numbers. The
3, 2, 1 count down is with 0 palce setting.

At game termination, if you win, both scores will be displayed alternatingly. If
the display is also set to a full 9 places (many zeroes showing) you are entitled to

a free game. A display set to 0 places shows no free game. If only a negative
score is flashed at the end, it means the HP-67 has gotten 6 or more shots off,
and you have lost.

SHOOTING GALLERY

25¢ RCL $$ SLOW SHOT   INITIAL

STEP	INSTRUCTIONS	INPUT DATA/UNITS	KEYS	OUTPUT DATA/UNITS
1	Input program (sides one and two)			
2	Key in seed such that 0<seed<1:	seed	E	0.00*
3	To start a new game, press:		A	12.**
4	See displayed the shot number and then the			
	target field.			target *
5	As quickly as possible, key in the position			
	value you think is correct, DURING A PAUSE.	#		
	If guess was correct, see displayed the points			
	gained during that round. Otherwise, see a			
	negative number representing the points gained			
	so far, by the machine.			
6	Repeat steps 4 through 6 for all 12 shots.			
7	At end of game, see winning score, or machines			
	score as described on page 2, bottom.			
8	NOTE: if inputting point position number			
	causes program to halt, key in the value of			
	of what you guess to be the correct position:	#	C	
9	(Optional)--At end of game, duing a pause, to			
	view the amount of "money spent" press:		B	
	67 will pause to display amount spent, then			
	return to the score displays.			
	THIS PROGRAM IS MENT TO BE KEPT RUNNING AT ALL TIMES. A CONSTANT FLASHING DISPLAY AT THE END IS NORMAL.			
	INPUT ALL GUESSES AND PRESS ANY LETTER KEYS DURING A ONE SECOND PAUSE MODE. THE ONLY EXCEPTION IS THE "A" KEY, WHICH CAN BE INPUT WHEN THE MACHINE IS STOPPED, AND THE "C" KEY WHICH IS MENT TO BE USED WHEN THE PROGRAM IS INADVERTANTLY HALTED.			
10	For a new game, go to step 3 above.			
	DISPLAY READOUTS AND SCORING TECHNIQUES ARE DESCRIBED ON PAGES 1 AND 2.			
*	Denotes a one second pause			
**	Denotes a five second pause			

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STEP	KEY ENTRY	KEY CODE	COMMENTS	STEP	KEY ENTRY	KEY CODE	COMMENTS
001 *	f LBL A	31 25 11		*	f LBL 7	31 25 07	
	1	01			RCL 9	34 09	
	2	02			1	01	
	h ST I	35 33		060	+	61	
	g GSBf d	32 22 14			g X=Y	32 51	
	.	83			GTO 5	22 05	
	2	02		*	f LBL 3	31 25 03	
	5	05			0	00	
	h F? 2	35 71 02			STO A	33 11	
010	h F? 2	35 71 02			DSP 0	23 00	
	STO - 0	33 51 00			1	01	
*	f LBL 1	31 25 01			STO - 2	33 51 02	
	h RC I	35 34			RCL 2	34 02	
	DSP 0	23 00		070 *	f LBL 4	31 25 04	
	f -X-	31 84			h PAUSE	35 72	
	0	00			f DSZ	31 33	
	g GSBf e	32 22 15			GTO 1	22 01	
	1	01			6	06	
	0	00			CHS	42	
020	STO B	33 12			RCL 2	34 02	
	x	71			g X<Y	32 71	
	f INT	31 83			GTO 6	22 06	
	h X≷Y	35 52			1	01	
	g X=Y	32 51		080	9	09	
	1	01			9	09	
	h LST X	35 82			RCL 1	34 01	
	+	61			g X≤Y	32 71	
	RCL B	34 12			GTO 6	22 06	
	÷	81			9	09	
030	g GSBf e	32 22 15			STO A	33 11	
	RCL B	34 12			h SF 2	35 51 02	
	x	71			h R↓	35 53	
	1	01		*	f LBL 6	31 25 06	
	+	61		090	RCL A	34 11	
	f INT	31 83			h ST I	35 33	
	STO 9	33 09			DSP (i)	23 24	
	g 10^x	32 53			h R↓	35 53	
	x	71			RCL 2	34 02	
	DSP 9	23 09		*	f LBL 0	31 25 00	
040	h PAUSE	35 72			h PAUSE	35 72	
	5	05			h X≷Y	35 52	
	h X≷Y	35 52			GTO 0	22 00	
*	f LBL 8	31 25 08		*	f LBL 5	31 25 05	
	DSP 2	23 02		100	h R↓	35 53	
	h F? 3	35 71 03			x	71	
	GTO 7	22 07			STO + 1	33 61 01	
	4	04			GTO 4	22 04	
*	f LBL 2	31 25 02		*	g LBLf d	32 25 14	
	1	01			0	00	
050	-	51			STO 1	33 01	
	f X=0	31 51			STO 2	33 02	
	GTO 3	22 03			h RTN	35 22	
	h PAUSE	35 72		*	g LBLf e	32 25 15	
	h F? 3	35 71 03		110	RCL E	34 15	
	h F? 3	35 71 03			9	09	
	GTO 2	22 02			9	09	

REGISTERS

0	1 (SCORE) PLAYER'S	2 (SCORE) MACHINE'S	3	4	5	6	7	8	9
$									USED

S0	S1	S2	S3	S4	S5	S6	S7	S8	S9

A	B	C	D	E	I
TEMPORARY STO.	TEMP. STO.			SEED	USED

STEP	KEY ENTRY	KEY CODE	COMMENTS	STEP	KEY ENTRY	KEY CODE	COMMENTS
	7	07					
	x	71		170			
	g FRAC	32 83					
	STO E	33 15					
	h RTN	35 22					
*	f LBL E	31 25 15					
	h F? 0	35 71 00					
120	h RTN	35 22					
	h SF 0	35 51 00					
	h CF 3	35 61 03					
	g FRAC	32 83					
	g x^2	32 54		180			
	STO E	33 15					
	g GSBf d	32 22 14					
	ENTER↑	41					
	STO 0	33 00					
	GTO 0	22 00					
130 *	f LBL C	31 25 13					
	1	01					
	h X⇄Y	35 52					
	GTO 8	22 08					
*	f LBL B	31 25 12		190			
	RCL 0	34 00					
	DSP 2	23 02					
	h PAUSE	35 72					
	DSP (i)	23 24					
	h R↓	35 53					
140	h RTN	35 22					
				200			
150							
				210			
160							
				220			

LABELS

A START	B RCL ＃＃	C SLOW SHOT	D	E INITIAL.		
a	b	c	d CLR R₁&R₂	e RND #		
0 END DSP LOOP	1 LOOP	2 DSP LOOP	3 MACH. WIN	4 SCORE DSP		
5 USER WIN	6 USED	7 TEST SHOT	8 USED	9		

d CLR R_1 & R_2 e RND #

FLAGS

0 USED	
1	
2 FREE GAME	
3 DATA INPUT	

SET STATUS

FLAGS		TRIG	DISP
	ON OFF		
0	☐ ☒	DEG ☒	FIX ☒
1	☐ ☒	GRAD ☐	SCI ☐
2	☐ ☒	RAD ☐	ENG ☐
3	☐ ☒		n 2