Compucorp 300-Series Programming Sheet Page 1/5

Date: 4/FEB/2026

Author: Brett Hallen

Step	Command	Note
01	RESET	
02	RCL	
03	0	Display current height
04	START/STOP	Pause to view height
05	RCL	
06	1	Display current velocity
07	START/STOP	Pause to view velocity
08	RCL	
09	2	Display fuel remaining
10	START/STOP	Pause to display fuel remaining
11	START/STOP	Pause to enter burn value
12	ST	
13	3	Store burn value in register 3
14	RCL	
15	1	Recall current velocity
16	ST	
17	4	Store current velocity to old velocity
18	RCL	
19	4	Recall old velocity
20	+	

Register	Purpose	Register	Purpose
0	Lander height	5	Average velocity
1	Current velocity	6	
2	Fuel remaining	7	
3	Fuel burn/thrust	8	
4	Old velocity	9	Lunar gravity

Compucorp 300-Series Programming Sheet Page 2/5

Date: 4/FEB/2026

Author: Brett Hallen

Step	Command	Note
21	RCL	
22	9	Add lunar gravity
23	-	
24	RCL	
25	3	Subtract fuel burn
26	=	Compute new velocity
27	ST	
28	1	Update velocity
29	(	
30	RCL	
31	4	Recall old velocity
32	+	
33	RCL	
34	1	Recall new velocity
35	)	Sum old & new velocity
36	/	
37	2	Calculate average
38	=	
39	ST	
40	5	Store average velocity

Register	Purpose	Register	Purpose
0	Lander height	5	Average velocity
1	Current velocity	6	
2	Fuel remaining	7	
3	Fuel burn/thrust	8	
4	Old velocity	9	Lunar gravity

Compucorp 300-Series Programming Sheet Page 3/5

Date: 4/FEB/2026

Author: Brett Hallen

Step	Command	Note
41	RCL	
42	0	Recall current height
43	-	
44	RCL	
45	5	Recall average velocity
46	=	Compute new height
47	ST	
48	0	Update current height
49	RCL	
50	2	Recall fuel remaining
51	-	
52	RCL	
53	3	Recall fuel burn/thrust
54	=	Compute remaining fuel
55	ST	
56	2	Update fuel remaining
57	RCL	
58	0	Recall current height
59	=	
60		

Register	Purpose	Register	Purpose
0	Lander height	5	Average velocity
1	Current velocity	6	
2	Fuel remaining	7	
3	Fuel burn/thrust	8	
4	Old velocity	9	Lunar gravity

Compucorp 300-Series Programming Sheet Page 4/5

Date: 4/FEB/2026

Author: Brett Hallen

Step	Command	Note
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		
76		
77		
78		
79		
80		

Register	Purpose	Register	Purpose
0	Lander height	5	Average velocity
1	Current velocity	6	
2	Fuel remaining	7	
3	Fuel burn/thrust	8	
4	Old velocity	9	Lunar gravity

Compucorp 300-Series Programming Sheet Page 5/5

Date: 4/FEB/2026

Author: Brett Hallen

Purpose:
Implements the classic Lunar Lander game.
Very simple:
$V_{new} = V_{old}$ + Lunar G - Burn
$H_{new} = H_{old} - V_{avg}$
Try to land (h=0) with velocity between 0 and 5 and with 0 or more fuel left.

Entry conditions:
R0 = lander height (i.e. 500)
R1 = current velocity (i.e. 50)
R2 = fuel remaining (i.e. 120)
R9 = lunar gravity (i.e. 5)

Execution:
[1] START/STOP: displays current height
[2] START/STOP: displays current velocity
[3] START/STOP: displays fuel remaining
[4] START/STOP
[5] Enter fuel burn
[6] START/STOP
[7] New height is displayed
[8] Restart program to continue

Exit conditions:
R0 = updated lander height
R1 = updated velocity
R2 = fuel remaining after burn