

Trick Shot

Inputs

length to wall (l)	2 [m]
height of wall (h)	5 [m]
initial velocity (vo)	11 [m/s]
acc. In y-dir. (ay)	-9.81 [m/s ²]

Coefficient and solution of quadratic equation

coeff_a =	24.1
coeff_b =	-72.0
coeff_c =	29.0
b1 = t1 ² =	2.5104
b2 = t2 ² =	0.4801

Output

Time of trick shot	
t1 =	1.58 [s]
t2 =	0.69 [s]
Angle of initial release	
theta1 =	83.4 [degrees]
theta2 =	74.8 [degrees]
Final y velocity	
vfy1 =	-4.62 [m/s]
vfy2 =	3.82 [m/s]

Solution A

t =	1.01 [s]
theta =	78.7 [degrees]
vo =	10.101 [m/s]

Graph Values

max. time =	2.0 [s]
Wall Edge	
x_wall_1	2 [m]
y_wall_1	0 [m]
x_wall_2	2.4 [m]
y_wall_2	5 [m]

Graph Values

#	t	xB1	yB1	xB2	yB2	xA	yA
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.1	0.1	0.7	0.2	0.7	0.1	0.7
3	0.1	0.2	1.4	0.4	1.4	0.3	1.3
4	0.2	0.3	2.1	0.6	2.0	0.4	1.8
5	0.3	0.3	2.6	0.8	2.6	0.5	2.4
6	0.3	0.4	3.2	1.0	3.1	0.7	2.8
7	0.4	0.5	3.7	1.2	3.6	0.8	3.3
8	0.5	0.6	4.1	1.4	4.0	1.0	3.6
9	0.6	0.7	4.5	1.6	4.4	1.1	4.0
10	0.6	0.8	4.9	1.8	4.7	1.2	4.3
11	0.7	0.9	5.2	2.0	5.0	1.4	4.5
12	0.8	1.0	5.5	2.2	5.2	1.5	4.7
13	0.8	1.0	5.7	0.0		1.6	4.8
14	0.9	1.1	5.9	0.0		1.8	4.9
15	1.0	1.2	6.0	0.0		1.9	5.0
16	1.0	1.3	6.1	0.0		2.0	5.0
17	1.1	1.4	6.1	0.0		0.0	
18	1.2	1.5	6.1	0.0		0.0	
19	1.2	1.6	6.0	0.0		0.0	
20	1.3	1.7	5.9	0.0		0.0	
21	1.4	1.7	5.7	0.0		0.0	
22	1.4	1.8	5.5	0.0		0.0	
23	1.5	1.9	5.3	0.0		0.0	
24	1.6	2.0	5.0	0.0		0.0	
25	1.7	0.0		0.0		0.0	
26	1.7	0.0		0.0		0.0	
27	1.8	0.0		0.0		0.0	
28	1.9	0.0		0.0		0.0	
29	1.9	0.0		0.0		0.0	
30	2.0	0.0		0.0		0.0	

