Horizontal projectiles solutions

Marble Launch – t = (2h/a)1/2 = [(2)(2.25)/(9.8)]1/2 = 0.68 s

horizontal distance – x = vt = 4.00 m/s (0.68 s ) = 2.72 m

Arrow – 25 m/s = vox 8 m tall tower

T = (16/9.8)1/2 = 1.27 s distance x = vt = 25 m/s (1.27 s) = 32 m

Two D kinematics problems horizontal launch

1. 15 m/s V0x from 55 mm cliff t = (110/9.8)1/2 = 3.3.5 s

x = vt = 15 m/s)(3.35) = 50.2 m

1. 15 m high vox = 20 m/s t = (30/9.8)1/2 = 1.75 s

X = vt = 20)(1.75) = 35 m

1. 1.5 m tall vox = 3.0 m/s (3/9.8)1/2 = 0.55 s x = vt = 3)(.55) = 1.65 m
2. 10.5 m high vox = ?? lands 26.5 m from base of tower

t = (21/9.8)1/2 = 1.46 s v = Δx/Δt = 26.5 m/1.46 s = 18.2 m/s

1. 60 m tall vox = 75 m/s t = (120/9.8)1/2 = 3.5 s x = vt = 75)(3.5 s) = 263 m
2. 10 m tall, vox = 8.0 m/s t = (20/9.8)1/2 = 1.42 s x = vt (8)(1.42) = 11.4 m
3. 12 m high vox = 26 m/s; t = (24/9.8)1/2 = 1.56 s x = vt = (26)(1.56) = 40.6 M
4. 10 M TALL 18.5 M/S = VOX t = (20/9.8)1/2 = 1.42 s x = vt = 18.5 m/s(1.42) = 26.3 m