PROJECTILES – DOG DISH - KEY
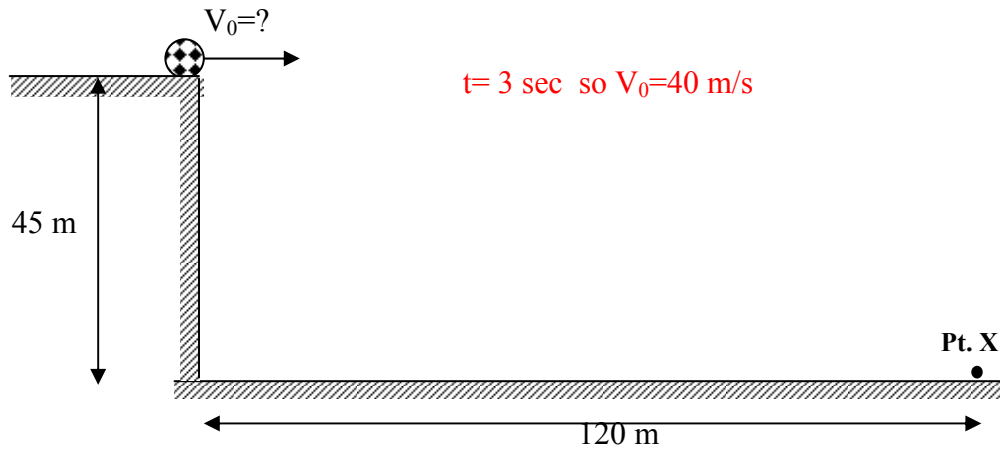
1] A ball is shot horizontally from the edge of the cliff below. What is the initial velocity of the ball if it strikes the ground at point X?

V_0=?

t= 3 sec so V_0=40 m/s

45 m

Pt. X

120 m

2] A ball rolls horizontally from the edge of the table below. (i) What is the minimum initial velocity the ball must have in order to land in the dog dish (to just reach the front edge)? (ii) What is the maximum initial velocity the ball must have in order to land in the dog dish (to just reach the far edge)? [Note: radius of dog dish is 10 cm & height is 5 cm]

V_0=?

t= 0.48 sec so V_{0min}=5 m/s

t= 0.48 sec so V_{0Max}=5.4 m/s

1.2 m

2.5 m