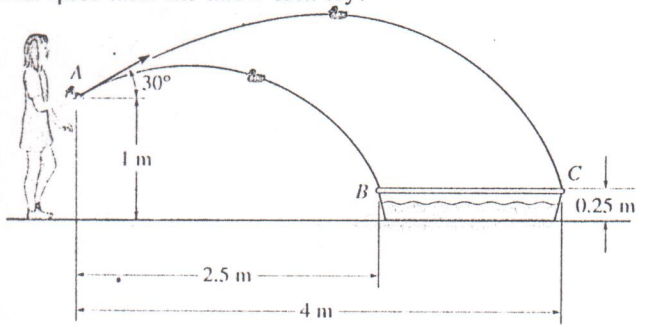
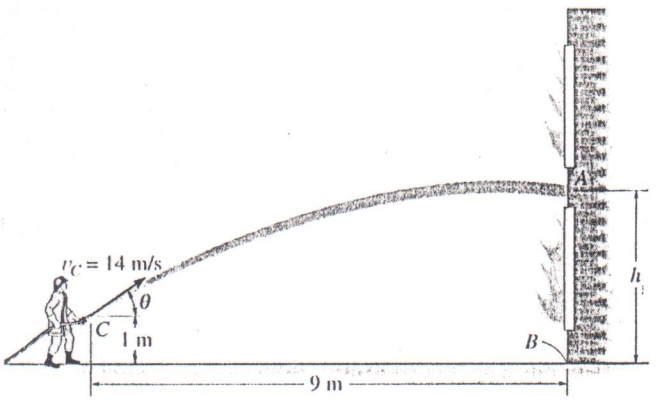
# Sheet #2 (Projectiles)

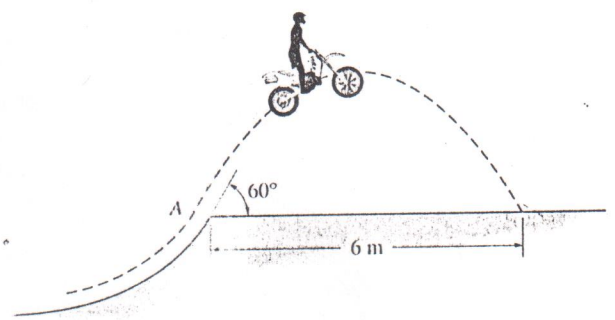
12-89 The girl always throws the toys at an angle of 30° from point $A$ as shown. Determine the time between throws so that both toys strike the edges of the pool $B$ and $C$ at the same instant. With what speed must she throw each toy?



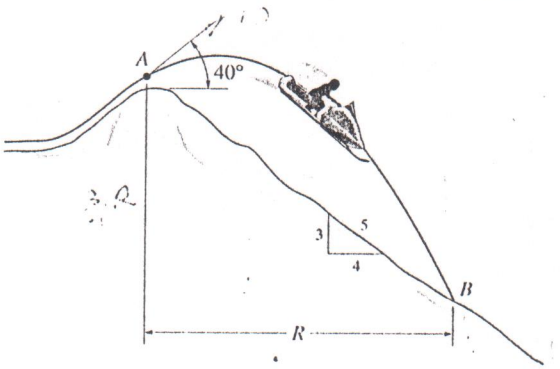

12-92 Determine the maximum height on the wall to which the firefighter can project water from the hose, if the speed of the water at the nozzle is $v_C = 14$ m/s.



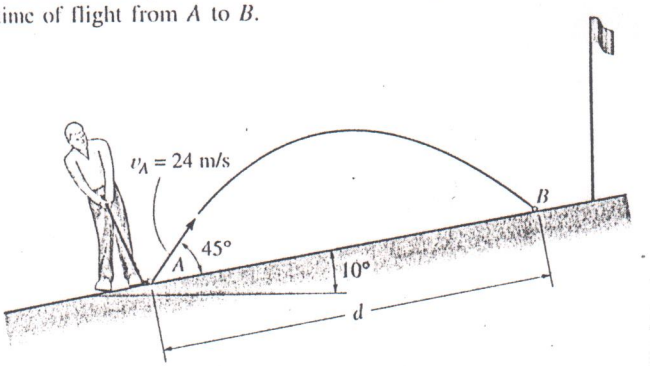

12-94 During a race the dirt bike was observed to leap up off the small hill at $A$ at an angle of 60° with the horizontal. If the point of landing is 6 m away, determine the approximate speed at which the bike was traveling just before it left the ground. Neglect the size of the bike for the calculation.



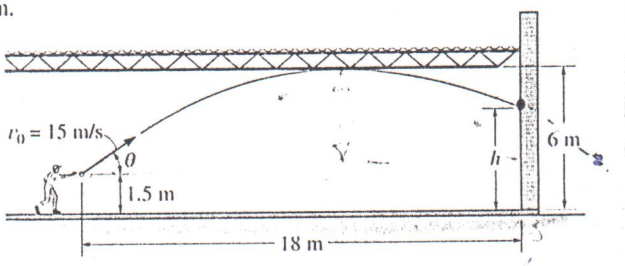

12-98 The snowmobile is traveling at 10 m/s when it leaves the embankment at $A$. Determine the time of flight from $A$ to $B$ and the range $R$ of the trajectory.




12-101 A golf ball is struck with a velocity of 24 m/s as shown. Determine the speed at which it strikes the ground at $B$ and the time of flight from $A$ to $B$.




12-102 The man stands 18 m from the wall and throws a ball at it with a speed $v_0 = 15$ m/s. Determine the angle $\theta$ at which he should release the ball so that it strikes the wall at the highest point possible. What is this height? The room has a ceiling height of 6 m.




12-105 The ball at $A$ is kicked such that $\theta_A = 30°$. If it strikes the ground at $B$ having coordinates $x = 5$ m, $y = -3$ m, determine the speed at which it is kicked and the speed at which it strikes the ground.