

Projectiles from a cliff...Part 1!

A rock is thrown from the top of a 25.0 m high cliff with an initial velocity of 18.0 m/s [61° NofE].

Sketch the rock's trajectory.

Find the time the projectile is in the air.



A golf ball is struck at 15m/s , 53° above the horizontal from the top of a hill.
Find the time in the air.
What is the velocity of the ball as it lands on the ground 35m below?

OR V_{iy} a_y d_y $t = ?$ V_{oy} Find V_{oy}

$$V_{oy}^2 = V_i^2 + 2ad$$

$$V_{oy}^2 = 11.98^2 + 2(-9.8)(-35)$$

$$V_{oy}^2 = 143.52 + 686$$

$$V_{oy} = \sqrt{829.52} *$$

$$V_{oy} = 28.8 \text{ m/s [down]}$$

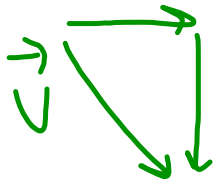
What about t ?

$$V_{oy} = V_i + at$$

$$-28.8 = 11.98 + (-9.8)t$$

$$\frac{-40.78}{-9.8} = t$$

$$t = 4.16 \text{ s}$$

then combine V_x and V_y 

Value

4% 51. (a) Ball A is rolled down a ramp on a 1.0 m high table, and exits the table horizontally at 2.0 m/s. A second identical ball B, is rolled down the same ramp but exits the table with a speed of 2.0 m/s at an angle. Calculate which ball will travel the greatest horizontal distance from the base of the table.

3%



Homework...

Page 115 #29

