If the position of a rocket initially at rest varies with time according to the formula x=3t^2, what is the acceleration?

Derive twice, 6 m/s

If the acceleration of a rocket initially at rest varies with time according to the formula a=2t, how far will the rocket go in the first 3 seconds, (9m)

X = vo + 1/2at^2

A “flying pig” (with mass m) moves at constant speed in a horizontal circle (with radius r) as it is suspended by a small string attached to a hook on the ceiling. Which equation below gives the tension in the string?

M(w^4r^2 + g^2)^1/2

What launch angle up from the horizontal will send a projectile the farthest, if you ignore air friction?

45 degrees

Bob throws a rock off a 30 m tall cliff at an angle of 45 degrees up from horizontal. When the rock is 15 m above the ground, which one of these is true?

The rock has constant acceleration

If two rocks are at the same height above ground, and one is dropped while the other is thrown horizontally at the same exact time, which will hit the ground first?

They will both hit the ground at the same time

What is the slope of a graph of velocity versus time?

Acceleration

Which of these best describes velocity in this graph of displacement (Y axis) versus time (X axis)

Velocity is increasing

Which one of these is true of an object that is moving around a circle at 5.0 mps?

Speed is constant

A rock dropped off a cliff hits the ground with an impact speed of 30 m/s. How tall is the cliff? (45m)

Vf = at

X= 1/2at^2