

Accelerated Motion Examples

If I hold a ball 5.0 m off the ground and I drop it, it will hit the ground 1.01 seconds later. How fast is it moving when it hits the ground? What is its acceleration on the way down? Draw Velocity and Acceleration graphs for the motion of the ball.

What does the area under the Velocity graph Represent? _____

What is the formula for the area under your Velocity graph: _____

What does slope of a Velocity Graph represent? _____

What does the Area under the Acceleration Graph Represent? _____

What is the formula for the area under your Acceleration Graph: _____

If the traffic light turns green and I put my foot on the gas in my car to accelerate at 6.0 m/s^2 for 5.0 seconds how fast am I going? How far did I travel while accelerating? Your answer must include Velocity and Acceleration graphs!

If I drop a brick 1.7 m how long will it take to hit the floor (assume $a = 9.8 \text{ m/s}^2$) Your answer must include Velocity and Acceleration graphs!

A skateboarder is moving at a constant speed of 1.75 m/s when she starts up an incline that causes her to slow down with an acceleration of -0.2 m/s^2 . How much time will pass before her velocity equals 0 m/s? You answer must include Velocity and Acceleration graphs!

If I throw an object straight up in the air with an initial velocity of 7 m/s, how high will it go and how long will it be in the air? You answer must include Velocity and Acceleration graphs!