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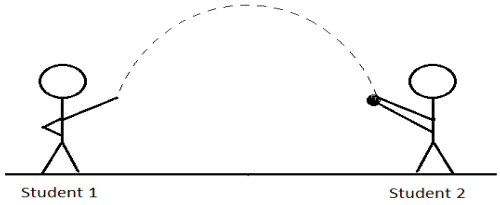
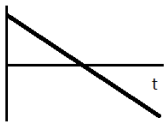
(3.01) Projectile Motion Concepts Worksheet

Use the following scenario for questions #1 and #2:

A ball is thrown by Student 1 to Student 2 and follows the path shown to the right. Data is recorded from the time that the ball leaves Student 1's hand until just before it reaches Student 2's.

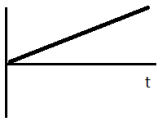


1. When plotted against time, which of the following variables would produce Graph #1?
   a. Horizontal Position
   b. Horizontal Velocity
   c. Vertical Position
   d. Vertical Velocity
   e. None of the above



Graph #1

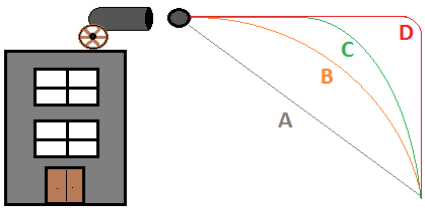
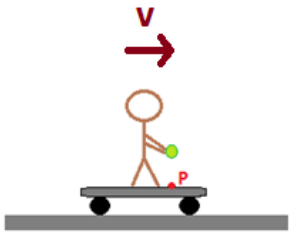
2. When plotted against time, which of the following variables would produce Graph #2?
   a. Horizontal Position
   b. Horizontal Velocity
   c. Vertical Position
   d. Vertical Velocity
   e. None of the above



Graph #2

3. Mark kicks a soccer ball off the ground with an initial velocity Vo and at an angle θ. When the ball is at its highest vertical position:
   a. The acceleration is instantaneously equal to 0 m/s^2
   b. the Horizontal Velocity is instantaneously equal to 0 m/s
   c. the Vertical Velocity is instantaneously equal to 0 m/s
   d. Both choices A and B are correct
   e. Both choices A and C are correct

4. A cannon, resting on the roof of a building, fires a cannonball horizontally. Which of the following four flight paths (A-D) would correctly track the ball's motion to the ground?



5. A skateboarder, gliding with constant velocity, drops a tennis ball above Position P on the board. If the skateboarder continues with constant velocity after release, where will the tennis ball hit the board?
   a. In front of Position P
   b. Position P
   c. Behind Position P