Horizontal Projectile Motion Worksheet

Name: _____ Period: _____ Date: _____

Answer the following questions on a separate piece of paper and SHOW ALL WORK.

1. Florence Griffith-Joyner of the United States set the women's world record for the 200 m run by running with an average speed of 9.37 m/s. Suppose Griffith-Joyner wants to jump over a river. She runs horizontally from the river's higher bank at 9.37 m/s and lands on the edge of the opposite bank. If the difference in height between the two banks is 2.00 m, how wide is the river?

2. Recall Elmer Trett, who in 1994 reached a speed of 372 km/h on his motorcycle. Suppose Trett drives off a horizontal ramp at this speed and lands a horizontal distance of 40.0 m away from the edge of the ramp. What is the height of the ramp? Neglect air resistance.

3. The longest stuffed toy ever manufactured is a 420 m snake made by Norwegian children. Suppose a projectile is thrown horizontally from a height half as long as the snake and the projectile's horizontal displacement is as long as the snake. What would be the projectile's initial speed?

4. The world's largest flowerpot is 1.95 m high. If you were to jump horizontally from the top edge of this flowerpot at a speed of 3.0 m/s, what would your landing velocity be? (Note: This is asking for the TOTAL velocity at the end, not one of the components)

5. A lunch pail is accidentally kicked off a steel beam on a building under construction. Suppose the initial horizontal speed is 1.50 m/s. How far does the lunch pail fall after it travels 3.50 m horizontally?

6. A squirrel on a limb near the top of a tree loses its grip on a nut, so that the nut slips away horizontally at a speed of 10.0 cm/s. If the nut lands at a horizontal distance of 18.6 cm, how high above the ground is the squirrel?