Name: _____

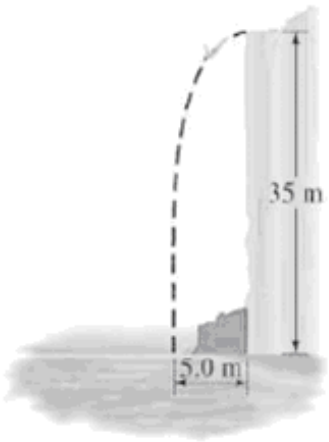
AP Physics: Kinematics
Full and ½ Projectile Homework

Conceptual Questions:

1. An arrow is aimed horizontally, directed at the center of a target 20.0 m away. The arrow hits 0.050 m below the center of the target. Neglecting air resistance, what was the initial speed of the arrow?
   A. 20 m/s
   B. 40 m/s
   C. 100 m/s
   D. 200 m/s

2. An Olympic long jumper is capable of jumping 8.00 m. Assuming his horizontal speed is 9.10 m/s as he leaves the ground, how long is he in the air and how high does he go vertically?

3. Cliff divers in Acapulco push off horizontally from rock platforms about 35.0 m above the water, but must clear rocky outcrops at the water level that extend outwards into the water 5.00 m from the base of the cliff directly under their jumping point.
   A. What minimum velocity must they have to clear the rocks?
   B. How long are they in the air?



4. A daredevil motorcyclist must jump across a canyon 12.0 m wide. He leaves the edge of the cliff of a ramp angled by 15.0^{o}. With what initial velocity must he leave the cliff to make the jump?