Physics
Projectile Motion Problems

Name:_____ Block:_____

1. A cat runs and jumps from one roof top to another which is 5 meters away and 3 meters below. Calculate the minimum horizontal speed with which the cat must jump off the first roof in order to make it to the other.

2. An object is thrown off a cliff with a horizontal speed of 10 m/sec. After 3 seconds the object hits the ground. Find the height of the cliff and the total horizontal distance traveled by the object.

3. If a marble is released from a height of 10 meters how long would it take for it to hit the ground?

4. A ski jumper competing for an Olympic gold medal wants to jump a horizontal distance of 135 meters. The takeoff point of the ski jump is at a height of 25 meters. With what horizontal speed must he leave the jump?

5. A motorcycle stunt driver zooms off the end of a cliff at a speed of 30 meters per second. If he lands after 0.75 seconds, what is the height of the cliff?

6. A marble rolling at a speed of 2 meters per second falls off the end of a 1-meter high table. How long will the marble be in the air?

7. **Challenge!** A marshmallow is dropped from a 5-meter high pedestrian bridge and 0.83 seconds later, it lands right on the head of an unsuspecting person walking underneath. How tall is the person with the marshmallow on his head?