Name _____ Date _____ Period _____

Practice Quiz: Free Fall
C O N C E P T U A L   P H Y S I C S :   U N I T   1

DIRECTIONS: Use the equations below to solve the following problems. You must show all of your work to receive credit. This includes: 1) showing what is given, what you are trying solve for *(2 points)*   2) showing equation *(2 points)*   2) showing your work *(2 points)*   3) answer with correct units *(2 points)*. A total of 8 points/question.   **Total points = 40 points**

$$v = \frac{d}{t} \qquad v = v_0 + gt \qquad d = \frac{1}{2}gt^2 \qquad t = \sqrt{\frac{2d}{g}}$$

1. You drop a rock off the top of a building. It takes 6.0 s to hit the ground. How tall is the building?

2. You drop a rock off the top of a 100 m tall building. Assuming there is no air resistance, how long does it take to hit the ground?

3. You throw a rock off the top of a building with an initial velocity of 3.0 m/s. It hits the ground going 23 m/s. How long did it take to impact on the ground?

4. You throw a rock up into the air as hard as you can. It stays in the air a total of 6.0 s. What was the velocity of the rock when you threw it?

5. You toss a ball at 4.0 m/s straight upward. How much time will the ball take to reach the top of its path?