Name: Period:

Free Fall 3

1. If the mass of an object were doubled, its acceleration due to gravity would be

(1) halved

(2) doubled

(3) unchanged

(4) quadrupled

2. As an object falls freely near the surface of the Earth its velocity

3. As a body falls freely near the surface of the Earth, its acceleration

4. An object, initially at rest, falls freely near the Earth’s surface. How long does it take the object to attain a speed of 98 meters per second?

5. A softball is thrown straight up, reaching a maximum height of 20 meters. Neglecting air resistance, what is the ball’s approximate vertical speed when it hits the ground?6. A rock falls freely from rest near the surface of a planet where the acceleration due to gravity is 4.0 meters per second2. What is the speed of this rock after it faIls 32 meters?

7. An object falls freely from rest near the surface of Earth. What is the speed of the object after having fallen a distance at 4.90 meters?

8. An object is allowed to fall freely near the surface of a planet. The object has an acceleration due to gravity of 24 m/s2. How far will the object fall during the first second?

9. A student drops an object from the top of a building which is 19.6 meters from the ground. How long does it take the object to fall to the ground?

10. A ball is thrown straight up with a speed of 12 meters per second near the surface of Earth. What is the maximum height reached by the ball? (Ignore air friction.)