Name Key

Practice Test Gravity

Do the following questions in 4 column format. Make sure you round your answers and your answer has the correct units. 5 points each

1. A tennis ball is dropped off of the football bleachers to determine their height. If the ball is in the air for 1.23 seconds, how high are the bleachers?

$t = 1.23s$ $g = 10m/s^2$ $D = ?$	$D = \frac{1}{2} g t^2$	$= \frac{1}{2}(10m/s^2)(1.23s)^2$	$7.56m$

2. How fast is an object moving 2.34 seconds after it is dropped?

$t = 2.34s$ $g = 10m/s^2$ $v = ?$	$V = g t$	$= (10m/s^2)(2.34s)$	$23.4m/s$

3. Anthony drops a penny off the Empire State Building. How long does it take to hit the ground if it is 185 m tall?

$D = 185m$ $g = 10m/s^2$ $t = ?$	$t = \sqrt{\frac{2D}{g}}$	$= \sqrt{\frac{2(185m)}{10m/s^2}}$	$= 6.08s$

4. What is the acceleration due to gravity on the moon where an object falls 7.20 m in 3.04 seconds?

$D = 7.20m$ $t = 3.04s$ $g = ?$	$g = \frac{2D}{T^2}$	$= \frac{2(7.20m)}{(3.04s)^2}$	$= 1.56m/s^2$

5. A rock is dropped off a roof and it is determined to be moving at 23 m/s as it hits the ground. How long was it in the air?

$g = 10m/s^2$ $V = 23m/s$ $t = ?$	$t = \frac{V}{g}$	$= \frac{23m/s}{10m/s^2}$	$= 2.3s$

6. What is your reaction time if you catch a ruler after it has fallen .165 m?

$D = .165m$ $g = 10m/s^2$ $t = ?$	$t = \sqrt{\frac{2D}{g}}$	$= \sqrt{\frac{2(.165m)}{10m/s^2}}$	$= .182s$