Name _____ Date _____

<table>
<tr>
<td>

95 **Review**

For Test 2 MP 3

</td>
<td>

Friction = $F_{(NORMAL)} \times u$ w = mg   g = 9.8 m/s^2

$F = ma$ d=vt $v_f = v_i + at$ d= v_it + (1/2)at^2

$F = kx$ $F = Gm_1m_2/r^2$ $G = 6.67 \times 10^{-11}$

</td>
</tr>
</table>

1) A car was moving at a speed of 30 m/s. The car accelerated at 4 m/s^2 for 8 s. How far did the car travel?

What was the average speed of the car?

2) A 2 kg object was sliding across a surface at 6 m/s. The coefficient of friction (u) is 0.3. How long will it take for the object to stop? (Hint: the applied force is zero)

Answers: 1) 368 m 46 m/s 2) 2.04 s

3) A projectile was fired horizontally from a height of 20 m. The range was 50 m. What was the horizontal speed of the projectile?

4) A person walks 700 m to the west. They then travel 800 m to the south. They then travel 200 m to the east. Draw a head to tail diagram. Calculate the resultant displacement. In other words, how far are they from their starting point?

5) What is the initial speed of an object that accelerates at 30 m/s^2 for 10 s covering a distance of 2.3 km?
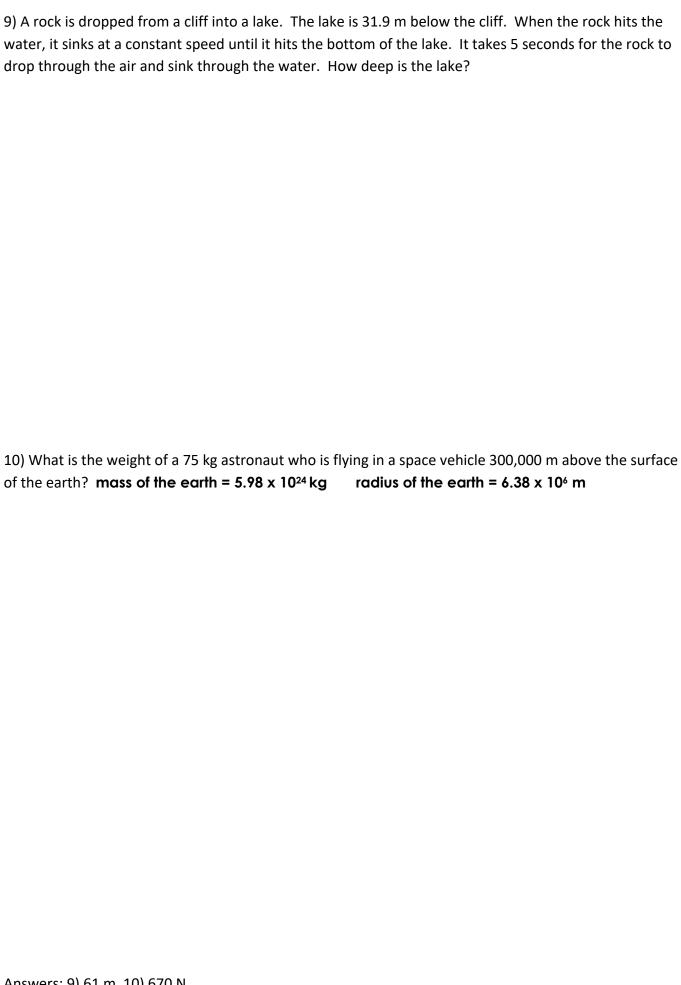
There are 1000 m for every km.

Answer: 3) 24.7 m/s   4) 943 m 5) 80 m/s

6) Fill in the chart below. Assume the constant does not change.

mass (g)	mass (kg)	elongation (cm)	elongation (m)	weight (N)	constant (N/m)
0	0	0	0	0	X
100		1.96			
				2	
		10			

7) What is the force of attraction between a 30 kg object and a 50 kg object if they are 3 m apart?

8) On another planet, an 80 N force is applied to a 10 kg object on a surface where u = 0.2. The objects accelerates across the surface at 5 m/s². What is g the acceleration due to gravity on this planet?

Answers: 6) Check with wiki or teacher. 7) 1.11 x 10^{-8} N   8) 15 m/s²

9) A rock is dropped from a cliff into a lake. The lake is 31.9 m below the cliff. When the rock hits the water, it sinks at a constant speed until it hits the bottom of the lake. It takes 5 seconds for the rock to drop through the air and sink through the water. How deep is the lake?

10) What is the weight of a 75 kg astronaut who is flying in a space vehicle 300,000 m above the surface of the earth? **mass of the earth = 5.98 x 10²⁴ kg   radius of the earth = 6.38 x 10⁶ m**

Answers: 9) 61 m 10) 670 N