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Worksheet III - Circular Motion
Unit 7

Name: _____
Period: _____

Directions: Show all work neatly and organized, label all units as you are solving the problems, circle final answer(s).

1. A 13 gram rubber stopper is attached to 0.93 meter string. The stopper is swung in a horizontal circle, making one revolution in 1.18 sec. Find the tension force exerted by the string on the stopper. (2 pts)

2. Consider the following changes to problem #1.
   a. The mass is doubled, but all other quantities remain the same. What would be the effect on the velocity, acceleration, and force?(2pts)

   b. The radius is doubled, but all other quantities remain the same. What would be the effect on the velocity, acceleration, and force?(2 pts)

   c. The period of revolution is half as large, but all other quantities remain the same. What would be the effect on the velocity, acceleration, and force? (2 pts)

3. Racing on a flat track, a car going 32 m/s rounds a curve 56 m in radius.

   a. what is the car's centripetal acceleration? (2pts)

   b. What minimum coefficient of static friction between the tires and road would be needed for the car to round the curve without slipping? (5 pts.)