**PreQuiz 5.1**

**Gravity and Circular Motion**

Name

Favorite Punchline

**Show your work, and circle your answers and use sig figs to receive full credit.**

1. What is the period of a merry-go-round with a radius of 1.75 m if the centripetal acceleration at this point is 7.2 m/s/s? (3.1 s)

2. What is the velocity of a 1350 kg car going around a 213 m radius corner if the frictional force is 9830 N? (39.4 m/s)

3. Tycho twirls a 2.7 kg hammer at 6.2 m/s around a 5.6 m radius vertical circle cleverly keeping the velocity constant. What force in what direction must he exert on the hammer at the top and at the bottom? (8.0 N up, and 45 N up)

4. At what distance from the center of a 4.59 x 1024 kg planet is the gravitational force on a 15.0 kg object equal to 60.0 N? (8.75x106 m)

5. Your 12,500 kg spaceship is orbiting 1.16x107 m from the center of a planet every 17,500 s. What is the mass of the planet? (3.02x1024 kg)