

Name _____ # _____

Centripetal Forces Review

1. Find the force needed to keep a 0.50 kg rat circling 15 times every 10, seconds, if it is spun in a circle with a radius of 70. cm. ($r = .70$ m)
2. Find the force of friction needed to keep a 3000. kg car traveling in an exit ramp of 100 m radius, with a speed of 22 m/s.
3. A passenger on Superman Ride of Steel amusement park ride is cresting a hill in the ride at 15 m/s. If the hill has a radius of 30. m, what force will the 50. kg passenger feel from his seat?
4. A certain loop coaster has a vertical loop with a 40. m radius. What speed at the top of the loop will make a 60. kg rider feel "weightless?"
5. The Rotor ride at Six Flags is a vertical cylinder that spins at 56 rpm which is enough to "stick" people to the walls. What force does a 90. kg rider feel from the walls of the ride if the ride has a diameter of 6.0 m?
6. How many g's does a pilot feel when executing a 100. m radius turn at 100. km/hr?