Phy 12 Name_____

Centripetal Acceleration

$A_c = v^2/r$ $C = 2\P r$ Period (T) = time for one complete revolution

1. A 150 g ball at the end of a string is swinging in a horizontal circle of radius 0.60 m. The ball makes exactly 2.00 revolutions in a second. What is the centripetal acceleration?

2. The moon's near circular orbit about the earth has a radius of about 385 000 km and a period of 27.3 days: A) Determine the acceleration of the moon toward the earth and B) express this answer in terms of g (ie 5g's)

Phy 12 Name_____

Centripetal Force

C=2¶r F= m(v2/r) Ac = v2/r Period (T) = time for one complete revolution

1. Find the centripetal force required to keep a 1000 kg car moving in a uniform circle of radius 50 m at a speed of 13.9 m/s

2. The centripetal force required to keep a 400 kg motorbike moving in a uniform circular path of radius 75 m is 4000 N. What is the speed of the motorbike in m/s?

3. Find the period of revolution of a motorbike moving in a circular path of radius 75 m at 27.4 m/s