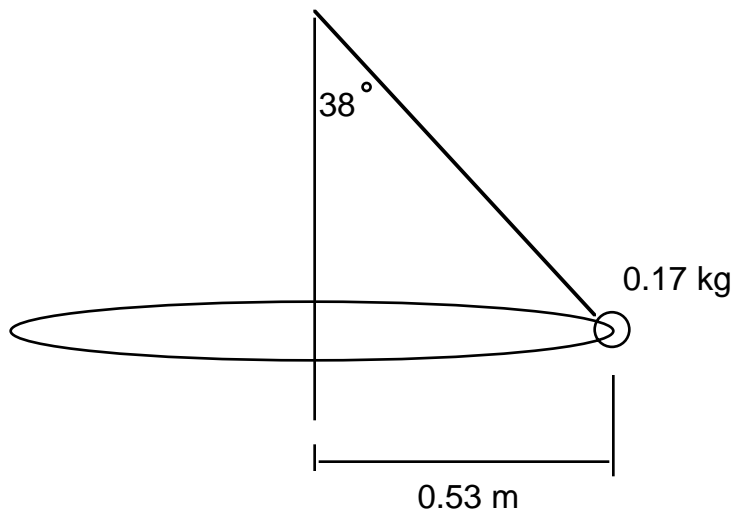


Phys12 Circular Motion : Quiz - 20

- 1) A 0.45 kg mass moves in a circle of radius 2.1 m with a speed of 5.2 m/s. Find the centripetal force.
- 2)a) An object moves in a circle of radius 14.2 meters with a period of 3.7 seconds. Find the speed.
b) Find the magnitude of the acceleration of the object.
- 3) If the centripetal force on a 0.29 kg object moving in a circle with a speed of 4.6 m/s is 7.3 N, find the radius of the circle.
- 4) An 850 kg car moves around a corner (radius 130 m) with a speed of 8.4 m/s. Find the force of friction.
- 5) A body moves in a circle suspended by a string as shown.



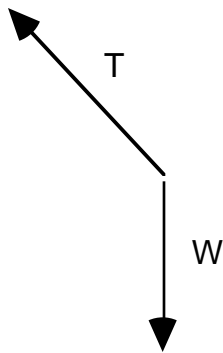
- a) For the above mass, draw the free-body diagram.
- b) Answer the following : (Give the magnitudes only)
 - i) The tension is _____
 - ii) The centripetal force is _____
 - iii) The speed is _____

6) A motorcyclist travels over a circular hill (radius 27 m).

a) Find the maximum speed at the top of the hill if the wheels don't leave the ground.

b) Find the normal force on the motorcycle at the above maximum speed.

Answers : 1) 5.8 N, 2)a) 24 m/s, b) 41 m/s², 3) 0.84 m, 4) 460 N, 5)a)



5)b)i) 2.1 N, ii) 1.3 N, iii) 2.0 m/s, 6)a) 16 m/s, b) 0.0 N.