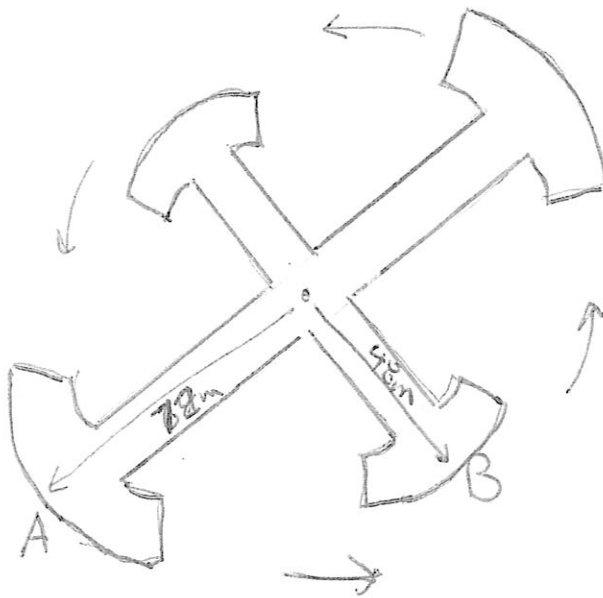


Circular Motion Quiz

Name _____

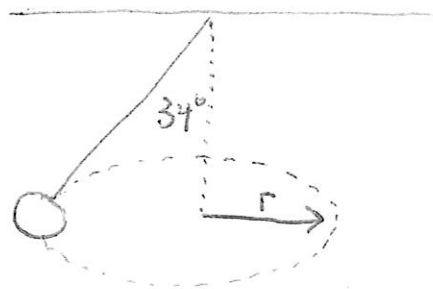
1. A space station consists of two outer wings with a distance of 72m and two inner wings with a distance of 48m from the center as shown in the diagram. The station rotates, and the astronaut at A experiences an acceleration of 9.8 m/s^2 .



- a) What is the period of the rotation of the space station?
- b) If the mass of the astronaut at B is 56kg, what are the astronaut's acceleration and normal force experienced by the wall?

c) If the period of the rotation increases, how does this change affect the normal force experienced by the astronauts

2. A 0.72 kg ball is swung at a constant speed in a horizontal circle so that the 1.3 m cord makes an angle of 34° with the vertical



a) Draw a diagram showing all the forces on the ball

b) What is the tension in the cord?

c) What is the centripetal force on the ball?