

Chapter 6

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Centripetal Force

Uniform Circular Motion, Force

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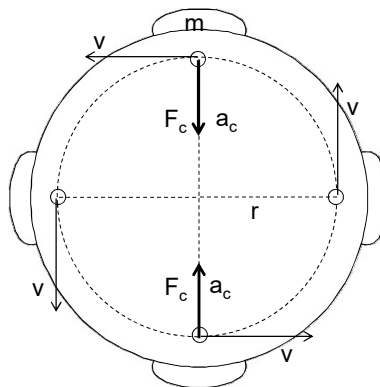
According to Newton's second law, all accelerations are caused by a net force.

In circular motion, the net force is called the centripetal force:

$$\Sigma F = ma_c$$

$$F_c = \frac{mv^2}{r}$$

The force is also directed toward the center of the circle.



Uniform Circular Motion, Force

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The centripetal force is NOT a new kind of force;

It is any force that keeps an object moving in a circular path without changing its speed.

It causes a change in the direction of the velocity.

It can be a tension force, a frictional force, a gravitational force, ... ,.

Without this force, an object will simply continue moving in straight line.