Name _____ Hour _____

Summary of Circular Motion and Gravity

motion in a straight line

v =

motion in a circle

v =

T = _____ time to make 1 revolution

Sometimes you know T without it being stated

Ex. _Earth around sun____

a =

a_c=

a_c = _____centripetal acceleration_____

Objects accelerate by changing _____ or changing _____.

An object that is traveling at a constant speed in a circle is accelerating. Why? _____

F =

F_c=

F_c = _____centripetal force_____

You can also make another equation for F_c by combining the last 2 equations.

F_c=

centripetal force- the force needed to keep an object _____

centrifugal force- _____

Name _____ Hour _____

GRAVITY

F_g= or w = mg (Weight is a force!!!!)

___= acceleration due to gravity (m/s^2)

___ = gravitational force (N)

The Universal Law of Gravitation

This equation shows us that everything _____ everything else.

F_g= G=

The force of the attraction depends on the _____ and the _____ of the objects

To find the acceleration due to gravity at any distance from any object

F_g= F_g

m= mass of object creating gravity (Earth usually)

r= distance from CENTER of object

For orbiting objects

In order for an object to orbit, what two forces must equal each other?

=

Pendulums:

The _____ affects the period (T) of a pendulum but _____ does NOT.