Centripetal Force

- o When the sum of all the forces acting on an object creates _____ motion, this sum is called _____ _____. Centripetal literally means towards the _____ of a curve/_____. So, centripetal force, ____, points _____ just like _____, ___. This is because _____ causes _____. But, remember _____ points _____ instead.

Circular Motion Examples

- o WARNING: Centripetal force is _____ a force, it is a ____ ___ _____ _____. So, you must always ask yourself, "Which true forces are creating the _____ motion?"
- o Combining Newton's 2nd Law (_____) and Centripetal Acceleration (_____), we get that ____=_____ = _____ = _____ = ____. Since mass and v^2 are both scalars, this reaffirms that ____, ____, and ____ have the same _____

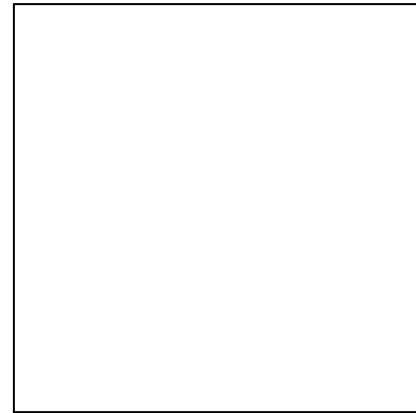Turning on a Road   Horizontal Sling   Solid Wheel (Ferris)

Vertical Sling   Banked Turn*   Orbits (next page)

Orbits

- o When a small mass _____ a large mass with a _____ radius, it will display _____ _____ _____. Thus it obeys ___ = _____ (use ___ because it is the _____ mass that _____). Since _____ force is a ____ force, it must be equal to at least one _____ force. In this case, ____ = ____
  - o So, for circular orbits

    _____ = _____

    =

  - o Note: ___ disappears. So, with a satellite orbiting Earth, you can't solve for _____
  - o Note: Since speed is _____, v = _____ = _____, where T equals _____

Motion Revisited

Diagonal push on a box with friction   Car slowing while traveling downhill.