AHS REGULAR PHYSICS PROGRAM

Direction: Answer the questions below on a sheet of size 2 paper.

1. In the equation $F_g = GMm/r^2$, F_g is the gravitational force, G is gravitational constant (6.67×10^{-11} kg m^2/s^2), M and m are two point masses and r is the distance between the two point masses.
   - What happens to F_g if M and m are doubled?
   - What happens to F_g if r is halved? doubled?
   - What happens to F_g if m is doubled and r is one fourth its original value?
   - What relationship exists between F_g and m, F_g and r, m and r?

2. In the equation $F_c = mv_{tan}^2/r$, F_c is the centripetal force, m is mass, v_{tan} is tangential velocity and r is radius of the circular path. Determine the relation that exists between the following variables: F_c and m, F_c and v_{tan}, F_c and r, m and v_{tan}, m and r.

Also available at http://ahsphysics.weebly.com