

Name _____

Show your work, circle your answers, and label them with units.

1. What is the force of gravity between a 3.4 kg sphere, and a 8.1 kg sphere if their centers are separated by 4.7 m?

2. What distance from the center of the earth ($m = 5.97 \times 10^{24}$ kg) is the force of gravity on a 5.00 kg mass equal to 10.0 N?

3. Your spaceship is orbiting 2.26×10^7 m from the center of a planet with a velocity of 100. m/s. What is the mass of the planet?

4. At what distance from the center of our 7.35×10^{22} kg moon is the orbital period equal to 86,164 seconds?

5. Draw the new orbit: (Circle or oval indicates your current orbit)

Speed up at x:

(elliptical, inside, tangent at x)

Slow down at x:

(more elliptical, outside orbit, tangent at x)

Slow down at x:

(less elliptical, outside orbit, tangent at x)

