Name _____ Hour _____

Practice TEST for Circular Motion/Gravity/Pendulums

1. A pilot (72 kg) is flying a small plane in a circular path with a radius of 50 m. If it takes him 15.7 sec to make 1 circle, calculate the centripetal force acting on him.

2. Calculate the force of attraction between the Earth and the moon if the distance from center to center is **3.84×10^8 m**.

3. How far away from the center of the earth **(r)** would you (100 kg) need to go in order for the acceleration due to gravity to be equal to 2.9 m/s^2? What would your **weight** be there? How **many g's** would you feel?

4. A satellite for AT&T is orbiting at 450,000 m above the surface of the earth. Calculate how fast it is traveling in **mph.**

Name _____ Hour _____

5. What are the **definitions and units** for the following items: gravitational force, centripetal force, centrifugal force, mass, G, period

6. How many meters long should a pendulum on earth be to have a period of 1.5 sec if the mass is 3.5 kg?

7. What affect does mass have on the period of a pendulum?

8. What affect does length have on the period of a pendulum?

9. Find the period (T) of a pendulum with a length of 0.84 m on the International Space Station which is 344,000 m above the surface of the Earth.