

1. Sirius Satellite Radio uses a satellite that has an altitude of 47,100km at aphelion and 24,500km at perihelion. The speed of the satellite is 2.33km/s at perihelion. Find the speed at aphelion.



2. Find the gravitational attraction between two people. You will need to estimate some numbers to get a result. Make sure you state the values of your estimates.

3. (a) Find the gravitational force Earth exerts on the moon.
(b) Find the gravitational force that the sun exerts on the moon. The sun actually does exert more force on the moon than does Earth. (c) Why doesn't the moon orbit the sun?

4. When you stand on a scale, it reads 70.0kg. It will read less if the moon is directly overhead and it will read more when the moon is on the opposite side of Earth. (a) Find the difference between the two scale readings to see why you have never noticed this before. (b) Explain the connection to ocean tides.

