1. An asteroid in a circular orbit is 4 times farther away from Sun than Earth. Find the period of its revolution about the Sun in Earth years.

2. A planet has R=3200 km and M=3x10^24 kg. Find g on the surface. What would be the weight of an m=100 kg body?

3. A certain planet, a candidate for extraterrestrial life has mass $M=4M_E$. What should be its radius in units of R_E to ensure the same strength of gravitational field g_s as on Earth?

4. Two points A and B are, respectively $r_A= 10\ R_E$ and $r_B= 20\ R_E$ away from the center of Earth. At point A a rocket of mass m experiences strength of gravitational field g and has potential energy U. Express similar quantities for the same rocket at point B in terms of their values at A:

   (a) Mass of the rocket :

   (b) Strength of gravitational field :

   (c) Potential energy: