

6-4)

As we will see later, the gravitational pull of the earth on a smallish object is actually inversely proportional to the square of the distance from the center of the earth. At the earth's surface, this force is of course equal to the object's weight, gm . At large distances, this force goes to zero.

Suppose an asteroid (mass = 20,000 kg) falls to earth from a great distance.

- a) What will be the asteroid's minimum possible speed when it hits the earth's surface?
- b) What will be the asteroid's minimum possible kinetic energy?
- c) How does your answer to (b) compare with the energy released by the Hiroshima bomb (6×10^{13} Joules)?