Example Weight of Object

- Calculate the gravitational force on a 3 kg book held 1 meter above the surface of the earth.

$$|F| = G\ M\ m\ /\ r^2$$

$$= (6.7 \times 10^{-11}\ m^3\ /\ (kg\ s^2))\ (6 \times 10^{24}\ kg)\ (3\ kg) / (6.4 \times 10^6 + 1)^2\ m^2$$

$$=\ 29.4\ kg\ m/s^2$$