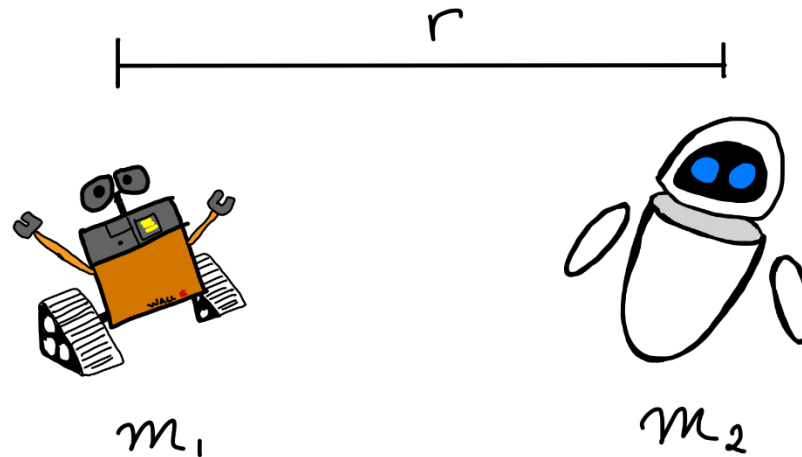# Universal Law of Gravitation

Any two objects with mass are going to feel a gravitational attraction to each other. The force that they will feel is given by Newton's Universal Law of Gravitation.



$$F_G = G \, \frac{m_1 m_2}{r^2}$$

$$G = 6.67 \times 10^{-11} \text{N} \, \frac{\text{m}^2}{\text{kg}^2}$$

# Homework

The objective of this week's homework is for you to remember how to work with numbers in the scientific notation, as we will be using them a lot in the next few classes.

**Problem 1.** Carry out the following operations and express the result in scientific notation:

$$\left(3.1 \times 10^2 \ kg\frac{m}{s^2}\right) \times (8.7 \times 10^3 \ s) =$$

$$(8 \times 10^3 \ J) \times (2.2 \times 10^{-2} \ s) =$$

$$\frac{5.4 \times 10^3 \ m}{2.2 \times 10^2 \ s} =$$

$$\frac{1.5 \times 10^5 \ N}{5.1 \times 10^{-5} \ kg} =$$