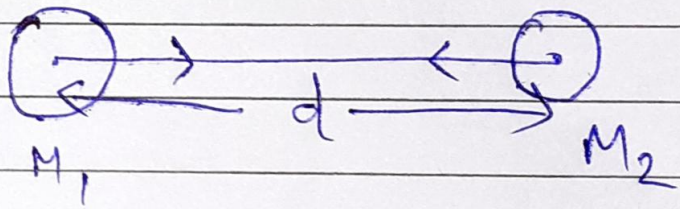
Newton's law of Universal Gravitation states that every particle ~~of~~ attracts every other particle in the universe with a force that is directly proportional to the product of the masses & inversely proportional to the square of the distance between them.

$$F \propto M_1 \times M_2$$

$$F \propto \frac{1}{d^2}$$



$$\Rightarrow F \propto \frac{M_1 \times M_2}{d^2}$$

$$\Rightarrow F = \frac{G M_1 M_2}{d^2}$$

where G is called universal gravitational constant.

$\therefore G = 6.67 \times 10^{-11}\ Nm^2/kg^2$