

Universal Gravitation Constant

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

Law of Universal Gravitation

Force of gravity on each object (N)

$$F = \frac{Gm_1m_2}{r^2}$$

Mass 1 (kg)

Mass 2 (kg)

Distance CM to CM (m)

Gravitational Field Strength (N/kg) or (m/s²)

Gravitational Field Strength

$$g = \frac{GM}{r^2}$$

Mass of object whose field being calculated (kg)

Distance CM to CM (m)

Orbital Velocity (m/s)

Mass of thing being orbited (kg)

Orbital Velocity

$$v_{orbit} = \sqrt{\frac{GM}{r}}$$

Distance CM to CM (m)