Gravitational Force

Force due to Gravity:

\[ \vec{F}_g = -\frac{G m_1 m_2}{r^2} \hat{e}_r \]

with \( G \) being the Gravitational constant equal to \( 6.67 \times 10^{-11} \, \text{Nm}^2/\text{kg}^2 \).

Potential due to Gravity:

\[ U = -\frac{G m_1 m_2}{r} \]

Superposition Principle:

\[ F_g(r_1 + r_2 + ...) = F_g(r_1) + F_g(r_2) + ... \]