

$$|\vec{A}| = \sqrt{A_x^2 + A_y^2 + A_z^2}$$

$$\theta = \tan^{-1} \frac{A_y}{A_x}$$

$$\vec{v} = \frac{\Delta \vec{r}}{\Delta t}$$

$$\vec{a} = \frac{\Delta \vec{v}}{\Delta t}$$

$$x = x_0 + v_0 t + \frac{1}{2} a t^2$$

$$v = v_0 + a t$$

$$v^2 = v_0^2 + 2 a \Delta x$$

$$\Sigma \vec{F} = m \vec{a}$$

$$F = G \frac{m_1 m_2}{R^2}$$

$$f_k = \mu_k F_N$$

$$a_c = \frac{v^2}{r}$$

$$T = \frac{2\pi r}{v}$$

$$F_c = \frac{m v^2}{r}$$

..... constants

$$g = 9.8 \text{ m/s}^2$$

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