

Formulario Moto Armonico

-Moto circolare uniforme

$$\omega = \frac{\Delta\alpha}{\Delta t} \text{ (rad/s)}$$

$$\omega = \frac{2*\pi}{T}$$

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

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

- Moto armonico

$$\text{ampiezza} = d;$$

$$\text{periodo} = T;$$

$$\text{frequenza} = f = \frac{1}{T};$$

$$s = r * \cos(\omega * t)$$

$$v = -v_0 * \sin(\omega * t) \text{ dove } v_0 = (\omega * r)$$

$$\vec{a} = -\omega^2 * \vec{s}$$

- Moto armonico di una molla

$$a = -\frac{k}{m} * r = -\omega^2 * s$$

$$\omega^2 = \frac{k}{m} \rightarrow \frac{2*\pi}{T} = \sqrt{\frac{k}{m}} \rightarrow T = 2 * \pi * \sqrt{\frac{m}{k}}$$

-Moto del pendolo

$$\omega^2 = \frac{g}{l} \rightarrow \frac{2*\pi}{T} = \sqrt{\frac{g}{l}} \rightarrow T = 2 * \pi * \sqrt{\frac{l}{g}}$$