

Circular Motion/Gravity Info

$$\vec{d} = \vec{v}_o t + \frac{1}{2} \vec{a} t^2$$

$$\vec{v}_f = \vec{v}_o + \vec{a} t$$

$$\vec{v}_f^2 = \vec{v}_o^2 + 2 \vec{a} \vec{d}$$

$$\vec{d} = \left(\frac{\vec{v}_f + \vec{v}_o}{2} \right) t$$

$$F_{fr} = \mu F_N$$

$$F_{fr} \leq \mu F_N$$

$$\Sigma F = ma$$

Not given:

definition s (v, a, weight)

$$\Sigma F_m = m v^2 / r = m 4 \pi^2 r / T^2$$

$$v = 2 \pi r / T$$

$$F = \frac{G m_1 m_2}{R^2} \quad g = \frac{GM}{r^2}$$

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

$$g = 9.80 \text{ m/s}^2$$

Topics:

Forces

Friction

Incline Plane

Free body diagrams Tension

Circular motion

Gravity (F_g , Grav. field strength)