

2.)

$$m = 500 \text{ kg} \quad P_{\max} = 50 \text{ kW} \quad v_0 = 0 \quad v_1 = 100 \frac{\text{km}}{\text{h}} = 27,7 \frac{\text{m}}{\text{s}} \quad \mu = 0,6$$

$$t = ?$$

$$P = \vec{F} \cdot \vec{v}$$

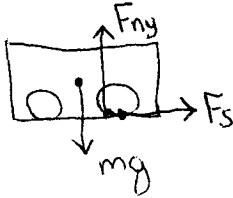
$$\vec{a} = \frac{\vec{F}_e}{m}$$

$$E_k = \frac{1}{2} m v^2$$

$$F_{s \max} = \mu F_{ny}$$

tapadási

$$P \cdot dt = \delta W$$



$$P = F \cdot v = m a v$$

$$F_e = F_s = \mu F_{ny} = \mu m g$$

$$F_s = F_{s \max} \rightarrow a_{\max} = \frac{F_s}{m} = \frac{\mu m g}{m} = \mu g$$

Kaparthat ha $v < v_{\text{crit}} \leftarrow P_{\max} = m a_{\max} v_{\text{crit}}$

$$v_{\text{crit}} = \frac{P_{\max}}{m a_{\max}} = \frac{P_{\max}}{\mu m g}$$

$$t = t_1(a_{\max}) + t_2(P_{\max})$$

$$t_1 = \frac{v_{\text{crit}}}{a_{\max}} = \frac{v_{\text{crit}}}{\mu g} =$$

$$t_2 = \frac{W}{P_{\max}} = \frac{\Delta E_k}{P_{\max}} = \frac{\frac{1}{2} m (v_1^2 - v_{\text{crit}}^2)}{P_{\max}} =$$

$$t = t_1 + t_2 =$$