



$$F_g = \text{mass} * g$$

$$F_n = F_g * \cos(\theta)$$

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

$$F_{\text{tension}} = F_{fr} + F_g * \sin(\theta)$$

$$F_{\text{tow}} = (F_{\text{tension}} + \text{mass} * a_c) / 3 \text{ ropes};$$

$$2s_c + (s_c - s_p) = \text{cons}$$

$$3a_c = a_p$$

$$A_c = a_p / 3$$