

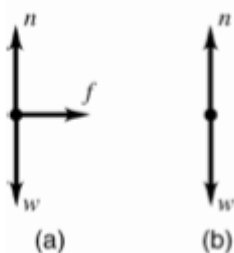
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Exercícios presentes no livro-texto Young & Freedman, vol.1:

4.28*, 4.34, 4.43, 4.49*, 4.54, 5.8, 5.33, 5.52*, 5.67*, 5.91, 5.115*, e 5.117.

4.28:



4.34:

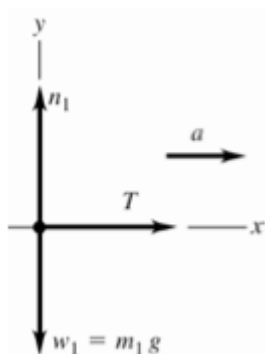
(a) $t = \frac{2\Delta x}{v + v_0} = 7,43 \times 10^{-4} \text{ s}$

(b) $a = \frac{v^2 - v_0^2}{2\Delta x}$ e $F = -ma = 848 \text{ N}$

4.43:

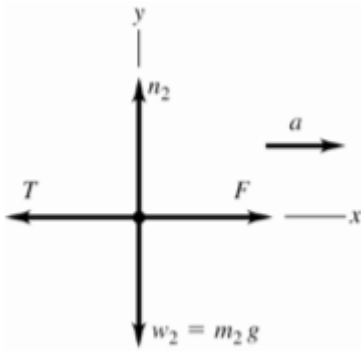
(a) $a = 2,50 \text{ m/s}^2$

(b)



$$T = m_1 a = 10,0 \text{ N}$$

(c)



$$F = T + m_2 a = 25,0 \text{ N}$$

4.49:

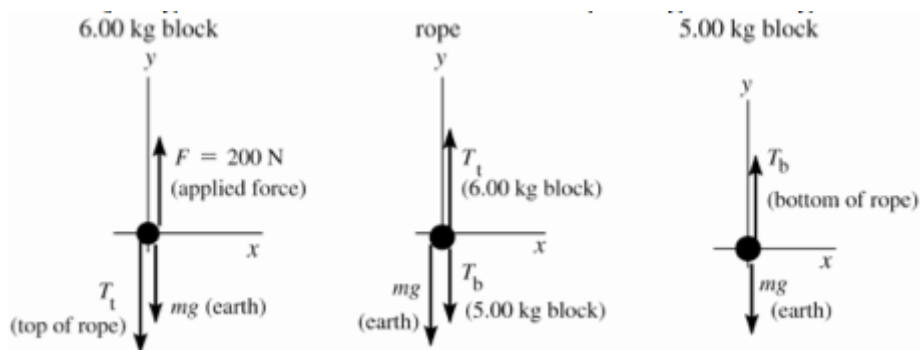
(a) $T = mg.$

(b) $T = mg.$

(c) $T = m(g + a).$

(d) $T = m(g - a).$

4.54:



(a)

(b) $a = \frac{F - mg}{m} = 3,53 \text{ m/s}^2.$

(c) $T_t = F - m_A(g + a) = 120 \text{ N}.$

(d) $T_m = T_t - m_B(g + a) = 93,3 \text{ N}.$

5.8:

(a) $T_B = \frac{mg}{\cos 40^\circ} = 5,23 \times 10^4 \text{ N}.$

(b) $T_A = T_B \sin 40^\circ = 3,36 \times 10^4 \text{ N}.$

5.33:

(a) $T = (\text{sen } \phi - \mu_c \cos \phi)m_{tot}g = 57,1 \text{ N}$.

(b) $f_{at_e} = mg \text{ sen } \phi = 146 \text{ N}$, ao longo do plano e subindo.

5.52:

(a) $v = \sqrt{Rg \text{ tg } \theta}$ então $T = 2\pi R/v = 6,19 \text{ s}$.

(b) Independe, pois v independe da massa.

5.67:

(a) $F = f_{at_{total}} = 1,44 \text{ N}$.

(b) $F = f_{at_{total}} + f_{at_B} = 1,80 \text{ N}$.

5.91: $a = g/\mu_e$.

5.115:

(a) $\cos \beta = \frac{\tau^2 g}{4\pi^2 r}$ e $\beta = 81,1^\circ$.

(b) $\beta = 90^\circ$ somente com $\tau \rightarrow 0$, ou seja, impossível.

(c) $\tau = 1,00 \text{ s}$ então $\cos \beta = 2,48$. Assim, só permitido que $\beta = 0$.

5.117:

