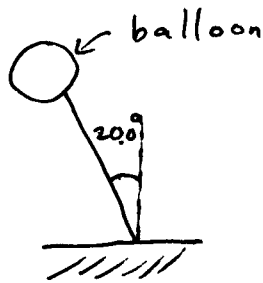
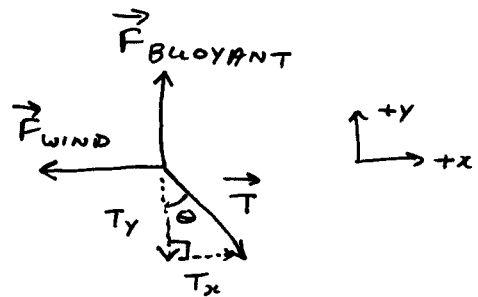


Exercise 8-10



Forces acting on balloon:



(a)

$$\Sigma F_x = 0$$

$$\therefore T_x - F_{WIND} = 0$$

$$\therefore F_{WIND} = T_x = T \sin \theta = (2.00 \times 10^3 \text{ N}) \sin 20.0^\circ \\ = 684 \text{ N}$$

(b)

$$\Sigma F_y = 0$$

$$\therefore F_{BUOYANT} - T \cos \theta = 0$$

$$\therefore F_{BUOYANT} = (2.00 \times 10^3 \text{ N}) \cos 20.0^\circ = 1.88 \times 10^3 \text{ N}$$