

## Chapter 12:

12.6 (a) 225 km/h. (b) 187.1 km/h.

12.8 (a) 135.3 ft. (b) 155.8 ft.

12.10  $0.414 \text{ m/s}^2 \searrow 15^\circ$ .

12.12 (a) A:  $0.698 \text{ m/s}^2 \rightarrow$ , B:  $0.233 \text{ m/s}^2 \downarrow$ . (b) 79.8 N.

12.37 (a)  $49.9^\circ$ . (b) 6.85 N.

12.46 (a) 668 ft. (b) 120.0 lb  $\uparrow$ .

12.56  $2.36 \text{ m/s} \leq v \leq 4.99 \text{ m/s}$ .

12.68 (a)  $F_r = -1.217 \text{ lb}$ ,  $F_\theta = 0.248 \text{ lb}$ .  
(b)  $F_r = -0.618 \text{ lb}$ ,  $F_\theta = -0.0621 \text{ lb}$ .

12.76  $v_r = v_0 \sin 2\theta / \sqrt{\cos 2\theta}$ .  $v_\theta = v_0 \sqrt{\cos 2\theta}$ .

12.79 (a)  $r = (g\tau^2 R^2 / 4\pi^2)^{1/3}$ . (b)  $g = 24.8 \text{ m/s}^2$ .