

(22.)

before

$$p_{ix} = (1865)(-13.4 \text{ m/s})$$

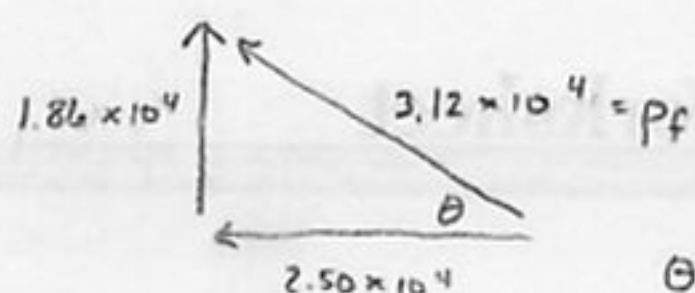
$$= -2.50 \times 10^4 \text{ kg} \cdot \text{m/s}$$

$$p_{iy} = (925)(20.1)$$

$$= 1.86 \times 10^4 \text{ kg} \cdot \text{m/s}$$

after

$$m = 1865 + 925 = 2790$$



$$\theta = \tan^{-1} \frac{1.86 \times 10^4}{2.50 \times 10^4}$$

$$= 36.6^\circ \text{ N of W}$$

$$p_f = m v_f$$

$$v_f = \frac{p_f}{m} = \frac{3.12 \times 10^4}{2790}$$

$$= 11.2 \text{ m/s}$$

$$@ 36.6^\circ \text{ N of W}$$

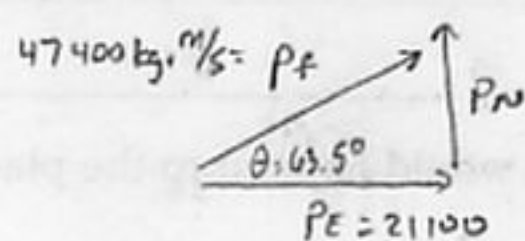
(25.)

$$M_E = 1345 \text{ kg} \quad M_N = 1923 \text{ kg}$$

$$V_E = 15.7 \text{ m/s} \quad V_N = ?$$

$$p_E = (1345)(15.7) \quad p_N = ?$$

$$= 21100 \text{ kg} \cdot \text{m/s}$$



$$p_f = m_f v_f \quad M_F = (1345 + 1923)$$

$$= (3268)(14.5) = 3268$$

$$= 47400 \text{ kg} \cdot \text{m/s}$$

$$p_N =$$

$$\sin 63.5^\circ = \frac{p_N}{p_f}$$

$$p_N = p_f \sin 63.5^\circ$$

$$= 47400 \sin 63.5^\circ$$

$$= 42400 \text{ kg} \cdot \text{m/s}$$

$$p_N = M_N V_N$$

$$42400 = 1923 V_N$$

$$V_N = 22.0 \text{ m/s} \text{ yes, exceeding } 20.1 \text{ m/s}$$