

10-5)

$$V_i = 0$$

$$V_f = ?$$



$$m = 1.5 \times 10^3 \text{ kg}$$

$$W_{\text{tow}} = 4.00 \times 10^3 \text{ J}$$

$$\Delta x = 25 \text{ m.}$$

a) $V_f = ?$

$$W = \Delta K$$

$$W_{\text{tow}} = \frac{1}{2} m (V_f^2 - V_i^2)$$

$$4.00 \times 10^3 = \frac{1}{2} (1.50 \times 10^3) V_f^2$$

$$V_f = 2.31 \text{ m/s}$$

b) $W_{\text{tow}} = \vec{F} \cdot \Delta \vec{x}$

$$4.00 \times 10^3 = F(25 \text{ m})$$

$$F = 1.60 \times 10^2 \text{ N}$$