

P #7

Ch 12 - pg 383

$$P_1 = 1.5 \text{ atm} = 1.5 \times 10^5 \text{ Pa}$$

$$V_1 = 4.0 \text{ m}^3$$

a) $P_2 = P_1$

$$V_2 = 2 \cdot V_1 = 8.0 \text{ m}^3$$

$$W = -P \cdot \Delta V$$

$$= -(1.5 \times 10^5 \text{ Pa})(8.0 \text{ m}^3 - 4.0 \text{ m}^3)$$

$$W = -6.0 \times 10^5 \text{ J}$$

b) $P_2 = P_1 = 1.5 \times 10^5 \text{ Pa}$

$$V_2 = \frac{1}{4} \cdot V_1 = 1.0 \text{ m}^3$$

$$W = -P \cdot \Delta V$$

$$= -(1.5 \times 10^5 \text{ Pa})(1.0 \text{ m}^3 - 4.0 \text{ m}^3)$$

$$W = +4.5 \times 10^5 \text{ J}$$