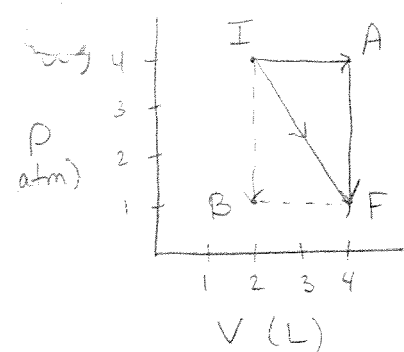


P #5

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$W = \text{area under IAF (negative)}$

$$W = -(4 \text{ atm} \times (4 - 2 \text{ L}))$$

$$= -(4 \times 10^5 \text{ Pa} \times .004 \text{ m}^3 - .002 \text{ m}^3)$$

$$W = -800 \text{ J}$$

b) $W = \text{area under IF (negative)}$

$$W = -\frac{1}{2}(4 - 1 \text{ atm})(4 - 2 \text{ L}) - (1 \text{ atm})(4 - 2 \text{ L})$$

triangle region rectangle region

$$= -\frac{1}{2}(3 \times 10^5 \text{ Pa} \times .002 \text{ m}^3) - (1 \times 10^5 \text{ Pa})(.002 \text{ m}^3)$$

$$W = -500 \text{ J}$$

c) $W = \text{area under IBF (negative)}$

$$W = -(1 \text{ atm})(4 \text{ L} - 2 \text{ L})$$

$$= -(1.0 \times 10^5 \text{ Pa})(.002 \text{ m}^3)$$

$$W = -200 \text{ J}$$