

2. work done by heart

$$\dot{W}_{\text{mech}} = \dot{m} \left(\frac{AP}{\rho} + \frac{v^2}{2} + gZ \right)$$

$$= \frac{(5.00 \text{ kg/min})(12.0 \text{ kPa})}{1,025 \text{ kg/m}^3} \left(\frac{1000 \text{ N/m}^2}{\text{kPa}} \right) \left(\frac{1 \text{ min}}{60 \text{ s}} \right)$$

~~$$= 0.976 \frac{\text{N} \cdot \text{m}}{\text{s}} \left(\frac{1 \text{ W}}{1 \frac{\text{N} \cdot \text{m}}{\text{s}}} \right) \left(\frac{1 \text{ kW}}{1000 \text{ W}} \right)$$~~

$$= 0.976 \frac{\text{N} \cdot \text{m}}{\text{s}} \left(\frac{1 \text{ W}}{1 \frac{\text{N} \cdot \text{m}}{\text{s}}} \right) \left(\frac{1 \text{ hp}}{745.7 \text{ W}} \right)$$

$$= \underline{\underline{0.00131 \text{ hp}}}$$

Equation worth 5 pts

hp conversion worth 3 pts

Not seeing Watts - 1