



$$k_{\text{air}} = 0.18 \frac{\text{J}}{\text{m} \cdot \text{C}}$$

$$h_e = 15 \frac{\text{J}}{\text{m}^2 \cdot \text{C}}$$

$$\Delta x = ?$$

B

$$\dot{q} = \dot{q}_2 = \dot{q}_3 = \dot{q}_T$$

C

$$\begin{aligned} \dot{q}_1 &= h_e \cdot A \cdot \Delta T = 15 \cdot A (50 - 25) = \\ &= 375 \text{ A} \end{aligned}$$

D

$$\dot{q}_T = u \cdot A \cdot \Delta T = u \cdot A (300 - 25)$$

E

$$375 \text{ A} = u \cdot A (300 - 25)$$

$$u = 1.36 \frac{\text{J}}{\text{m}^2 \cdot \text{C}}$$

F

$$\frac{1}{u} = \frac{l}{h} + \frac{\Delta x}{k} + \frac{1}{h}$$

$$\frac{1}{1.36} = \frac{l}{15} + \frac{\Delta x}{0.18} + \frac{1}{15}$$

$$\Delta x = 0.11 \text{ m} = 11 \text{ cm}$$