

$$Q = 8kl$$

$$P_k = 40A, P_l = 80A$$

$$\textcircled{1} k_0 = 2$$

$$Q = 8(2)l \Rightarrow Q = 16l$$

$$\Rightarrow l = \frac{Q}{16}$$

$$CT = 4k + 8l$$

$$\Rightarrow CT = 4(2) + 8\left(\frac{Q}{16}\right)$$

$$\Rightarrow \boxed{CT = \frac{1}{2}Q + 8}$$

$$\textcircled{2} CT = \frac{1}{2}Q + 8$$

$$\cdot CF = 8$$

$$\cdot CV = \frac{1}{2}Q$$

$$\cdot CM = \frac{CT}{Q} = \frac{1}{2} + \frac{8}{Q}$$

$$\cdot CFM = \frac{CF}{Q} = \frac{8}{Q}$$

$$\cdot CVM = \frac{CV}{Q} = \frac{1}{2}$$

$$\cdot Cmg = CT' = \frac{1}{2}$$

$$\textcircled{3} \frac{P_{mgk}}{P_k} = \frac{P_{mgl}}{P_l} \Rightarrow \frac{8l}{4} = \frac{8k}{8}$$

$$\Rightarrow \boxed{k = 2l}$$

$$Q = 8(2l)l \Rightarrow Q = 16l^2$$

$$\Rightarrow l^2 = \frac{Q}{16} \Rightarrow l = \frac{1}{4}Q^{\frac{1}{2}}$$

$$CT = 4k + 8l$$

$$\Rightarrow CT = 4(2l) + 8l$$

$$\Rightarrow CT = 16l$$

$$\Rightarrow CT = 16\left(\frac{1}{4}Q^{\frac{1}{2}}\right)$$

$$\Rightarrow \boxed{CT = 4 \cdot Q^{\frac{1}{2}}}$$

$$\textcircled{4} CT = 4 \cdot Q^{\frac{1}{2}}$$

$$\cdot CN = \frac{CT}{Q} = 4 \cdot Q^{-\frac{1}{2}}$$

$$\cdot Cmg = CT' = 2 \cdot Q^{-\frac{1}{2}}$$

$$\textcircled{5} \pi = RT - CT$$

$$\Rightarrow \pi = P \cdot Q - 4Q^{\frac{1}{2}}$$

$$\Rightarrow \pi = (2)(100) - 4(100)^{\frac{1}{2}}$$

$$\Rightarrow \pi = 200 - 40$$

$$\Rightarrow \boxed{\pi = 160A}$$