$$\frac{\Delta Q}{\Delta t} = m s_w (T_4 - T_3) \quad \text{—(2)}$$

↳ rate of heat Received by water

by (1) & (2) $$K \frac{A(T_1 - T_2)}{l} = m s_w (T_4 - T_3)$$

$$\boxed{K = \frac{l m s_w (T_4 - T_3)}{A (T_1 - T_2)}} \quad \text{—(3)}$$

↳ Thermal conductivity of the material of Rod.

— x —