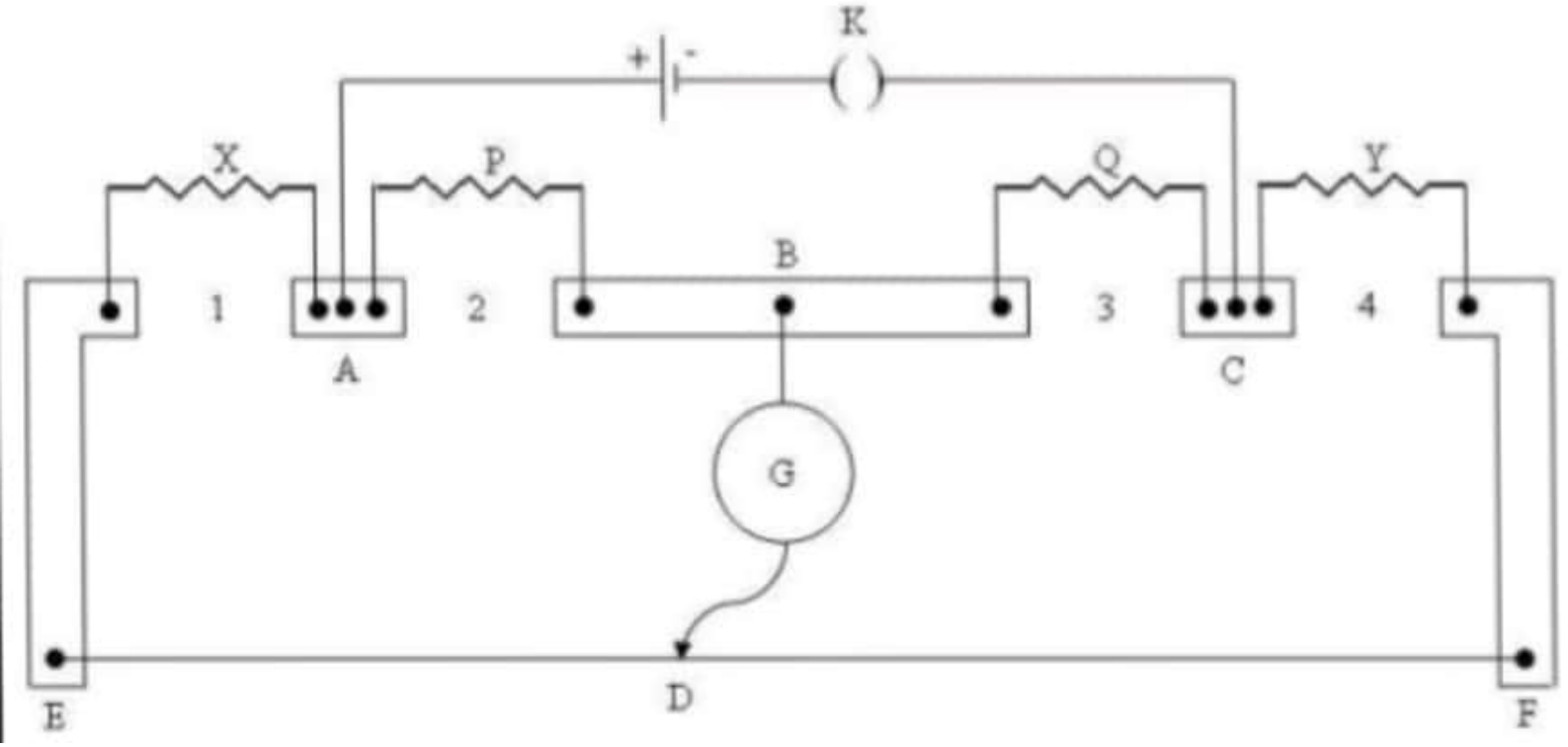

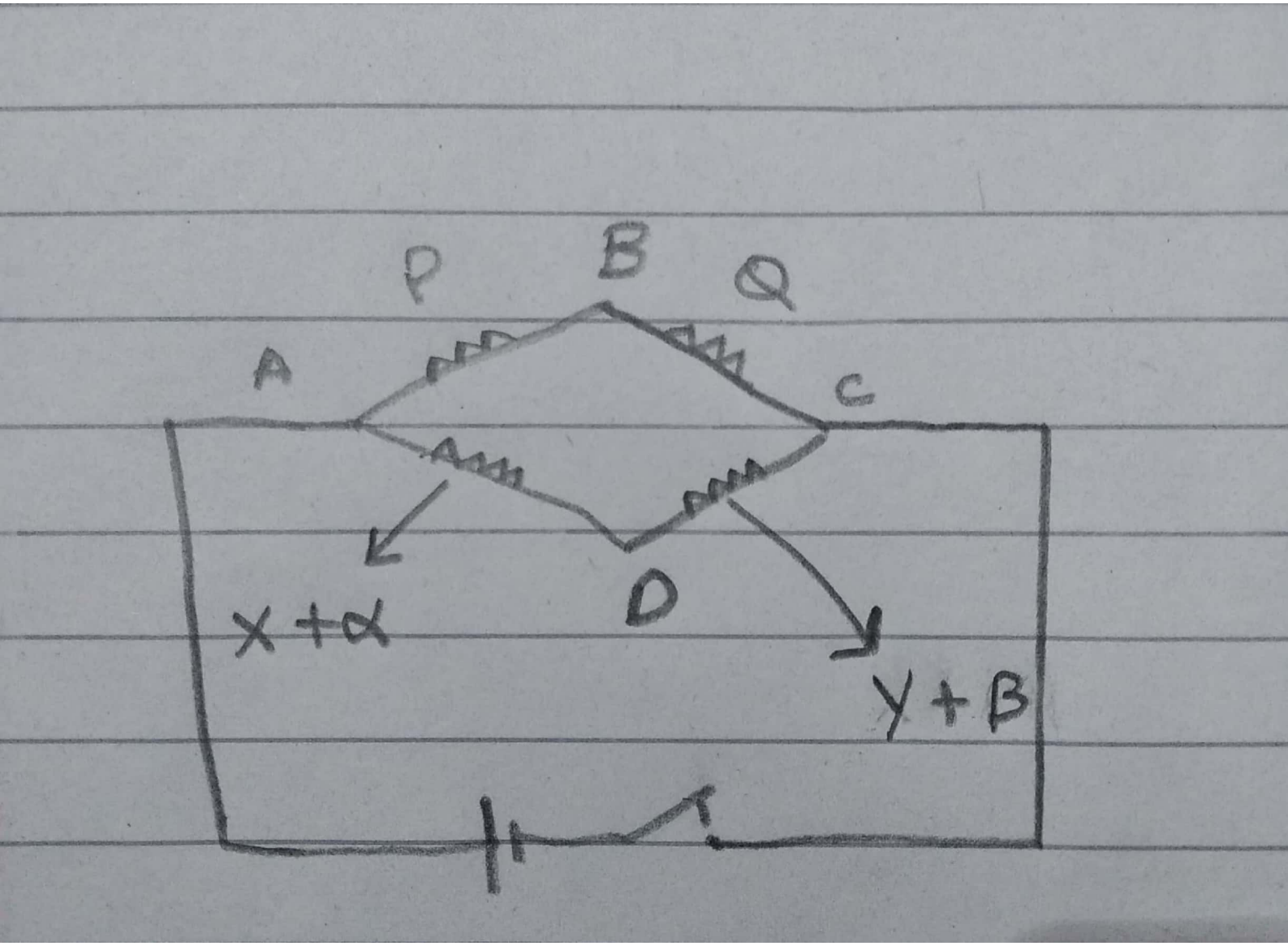

$$\frac{P}{Q} = \frac{X + \alpha}{Y + B}$$

$$\frac{P}{Q} = \frac{X + \sigma l_1 + k_1}{Y + \sigma(L - l_1) + k_2}$$

$\sigma l_1 + k_1 = \alpha$

$\sigma(L - l_1 + k_2 = B$

$$\frac{P}{Q} + 1 = \frac{X + \cancel{\sigma l_1} + k_1 + Y + \sigma L - \cancel{\sigma l_1} + k_2}{Y + \sigma L - \sigma L_1 + k_2} \quad \text{— (1)}$$

Swap X & Y

$$\frac{P}{Q} = \frac{Y + \alpha'}{X + \beta'}$$

$$= \frac{Y + \sigma l_2 + k_1}{X + \sigma(L - l_2) + k_2}$$

$$\frac{P+1}{Q} = \frac{Y + \sigma l_2 + k_1 + X + \sigma L - \sigma l_2 + k_2}{X + \sigma L - \sigma l_2 + k_2}$$

equate ① & ②

Nominator cancel out

$$X + \sigma L - \sigma l_2 + k_2 = Y + \sigma L - \sigma l_1 + k_1$$

$$X - Y = \sigma l_2 - \sigma l_1$$

$$\boxed{X - Y = \sigma(l_2 - l_1)}$$