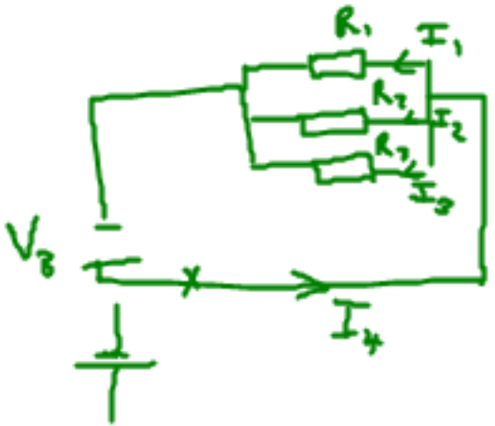
8)



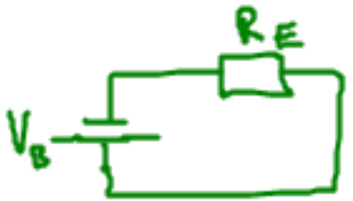
$I_4 = I_1 + I_2 + I_3$

$-R_3 I_3 + V_B = 0 \quad I_3 =$

$-R_2 I_2 + V_B = 0 \quad I_2 =$

$-R_1 I_1 + V_B = 0 \quad I_1 =$

d)



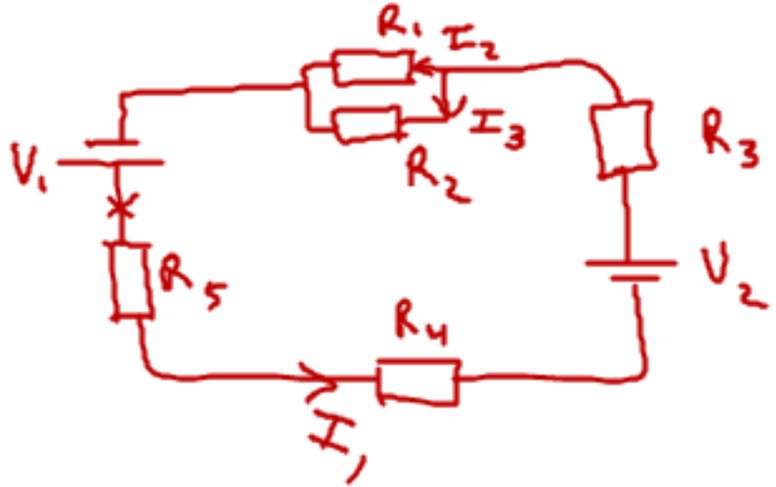
$\frac{1}{R_E} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$

$P = \frac{V^2}{R}$

c) $P = I V$

$P = I^2 R$

10)



$$I_1 = I_2 + I_3$$

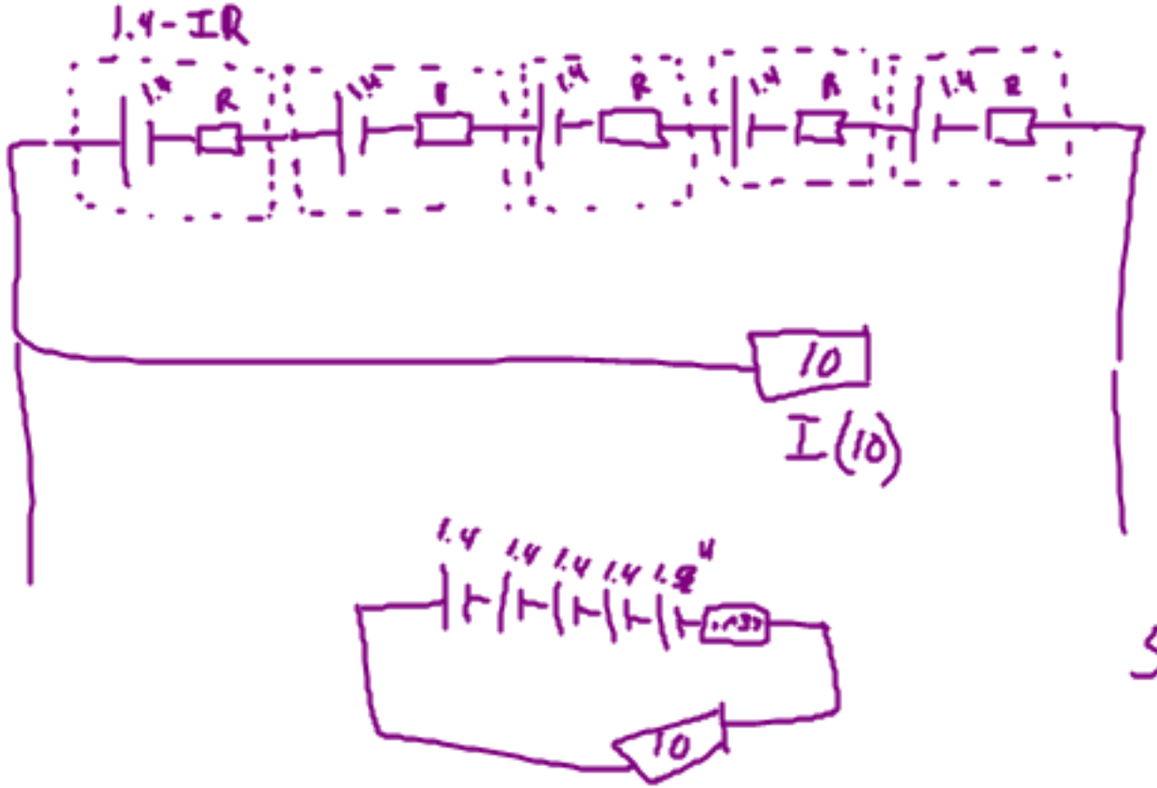
$$-R_5 I_1 - R_4 I_1 + V_2 - R_3 I_1 - R_1 I_2 + V_1 = 0$$

$$-R_5 I_1 - R_4 I_1 + V_2 - R_3 I_1 - R_2 I_3 + V_1 = 0$$

$$-R_1 I_2 + R_2 I_3 = 0$$

b) $P = I^2 R$

12)



$R = .037\Omega$

$5(1.4 - I(.037)) - V = 10I$

$(1.4 - I(.037)) = 2I$

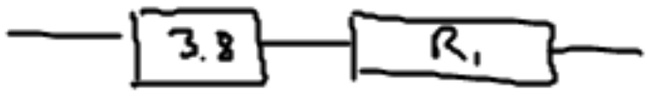
$1.4 = I(2.037)$

$5(1.4) - I(.037) = 10I$

14)

$R_E = 8.6\ \Omega$

$$\frac{1}{R_1} = \frac{1}{7.9} + \frac{1}{R}$$



$$R_E = 3.8 + R_1$$