

1 hr · 1 kW E = 3,600,000 J

I = 3A

$V = \frac{P}{I} = \frac{5000W}{3A} = 1.6 \cdot 10^3 V$

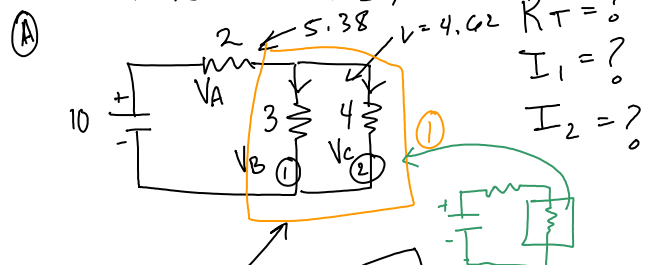
P = 5000W

t = 1hr = 3600s

v = 1.6kV

$E = \frac{5000W \cdot 3600s}{30} = 18,000,000 J$

★ Extra Q15;

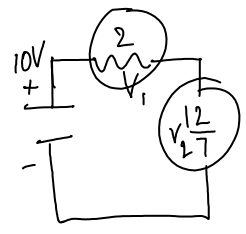


ⓑ What is the E-field inside of a conducting sphere?

$R_T = 2 + \left\{ \frac{2 \cdot 4}{7} \right\} = 3.71$

$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} = \frac{12}{7}$

$I = \frac{10}{3.71} = 2.69$



$V_1 = 2(2.69) = 5.38$

$V_2 = \left(\frac{12}{7}\right)(2.69) = 4.62$

$I_1 = \frac{4.62}{3} = 1.54$, $I_2 = \frac{4.62}{4} = 1.15$

2.69 = Total current