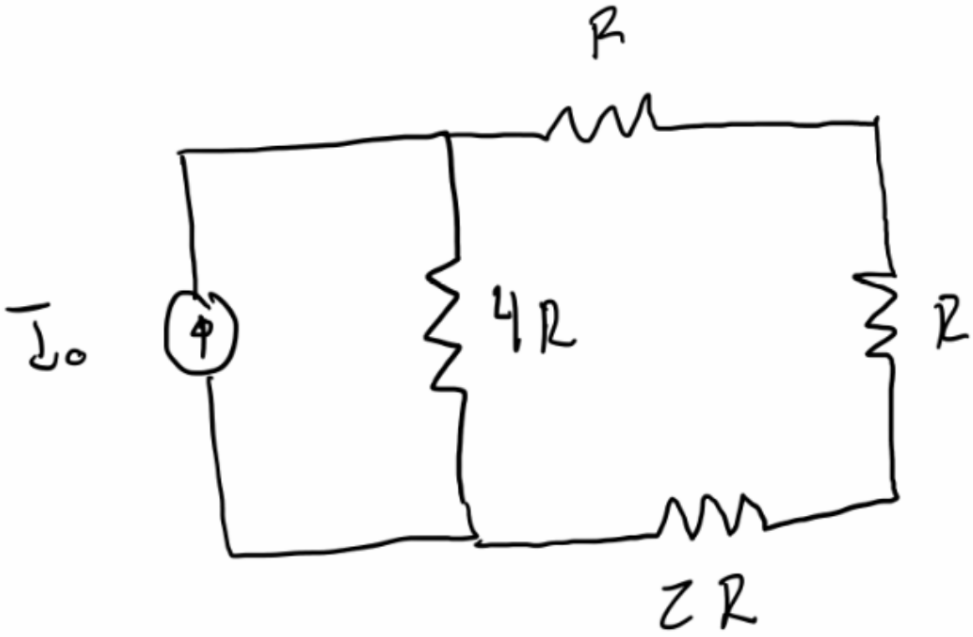
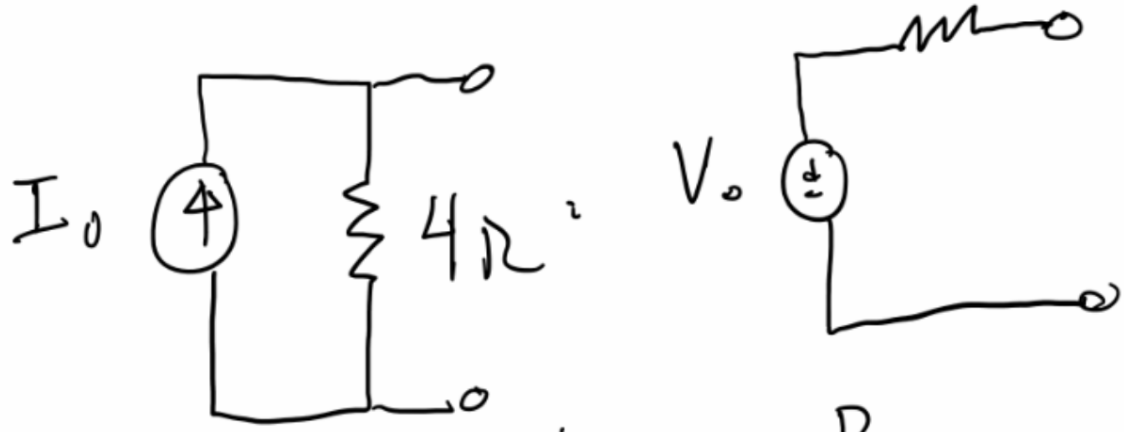
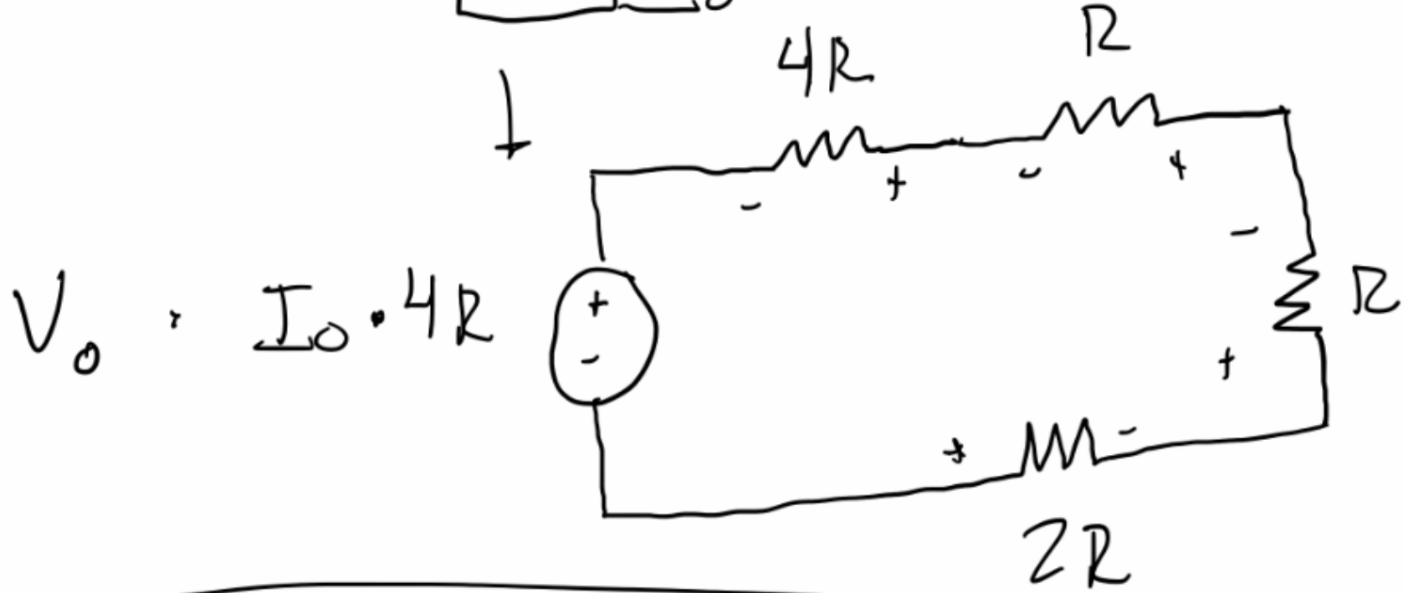
5.12 ;

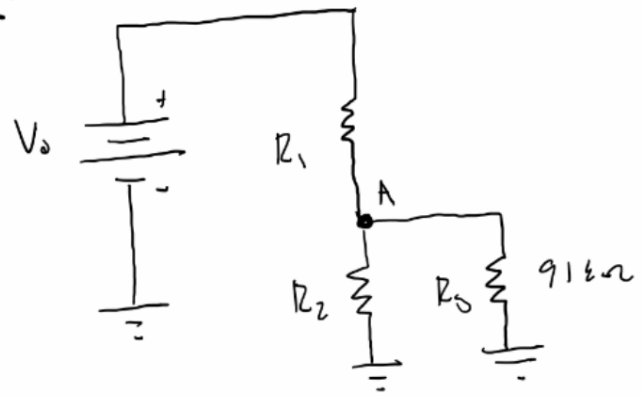


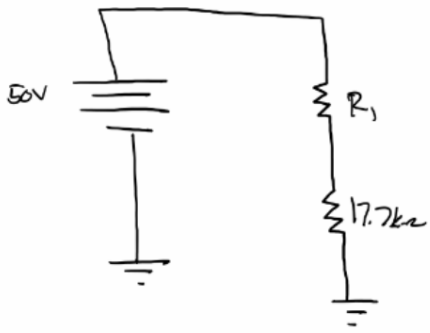




The 4R resistor has the largest power dissipation rating.

5.13:





$V_o = 50V$

$V_a = 32V$

$R_3 = 91\,k\Omega$

$P = 90.2mW$

$P = I \cdot V$

$V = I \cdot R$

$$\frac{90.2mW}{50V} = \frac{I \cdot 50V}{50V}$$

$$\frac{50V}{1.804mA} = \frac{1.804mA \cdot (R_1 + 17.7k\Omega)}{1.804mA}$$

$$27.716k\Omega - 17.700k\Omega = 10.0k\Omega = R_1$$

$$\frac{32}{50} \cdot 90.2mW = 57.7mW$$

$$\frac{57.7mW}{32} = \frac{I \cdot 32}{32}$$

$$1.804mA = I$$

$$\frac{32V}{1.804mA} = \frac{1}{1/R_2 + 1/91k\Omega}$$

$$17.7k\Omega = \frac{1}{1/R_2 + 1/91k\Omega}$$

$$17.7k\Omega(1/R_2 + 1/91k\Omega) = 1$$

$$\frac{17.7k\Omega}{R_2} + \frac{17.7k\Omega}{91k\Omega} = 1$$

$$-\frac{17.7k\Omega}{91k\Omega} \qquad -\frac{17.7k\Omega}{91k\Omega}$$

$$R_2 \cdot \frac{17.7k\Omega}{R_2} = 0.8055 \cdot R_2$$

$$\frac{17.7k\Omega}{0.8055} = R_2$$

$$22k\Omega = R_2$$

$R_1 = 10k\Omega$

$R_2 = 22k\Omega$