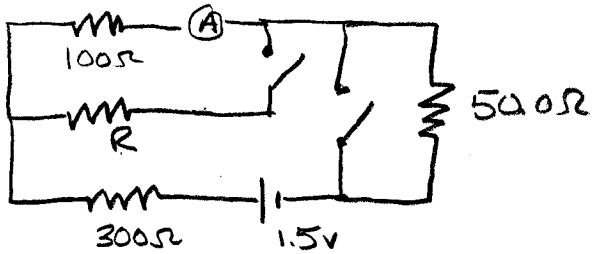
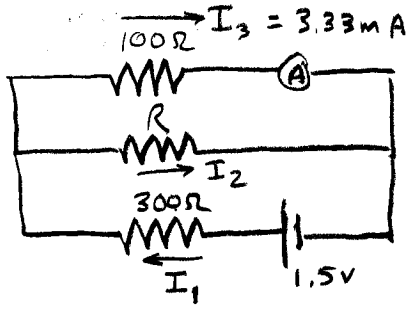
25-84 GIVEN:




SWITCHES OPEN $\quad 1.5V - I(300\Omega + 100\Omega + 50\Omega) = 0$

$$I = \frac{1.5V}{450\Omega} = 3.33\ mA$$

SWITCHES CLOSED:




$$1.5V - I_1(300\Omega) - (3.33mA)(100\Omega) = 0$$

$$I_1 = \frac{1.5V - (3.33mA)(100\Omega)}{300\Omega} = 3.89\ mA$$

$$I_1 = I_2 + I_3 = 3.89mA = I_2 + 3.33mA$$

$$I_2 = .56\ mA$$

$$1.5V - I_1(300\Omega) - I_2 R = 0$$

$$1.5V - (3.89mA)(300\Omega) - (.56mA)R = 0$$

$$R = \frac{1.5V - (3.89mA)(300\Omega)}{.56\ mA}$$

$$= \boxed{595\Omega}$$