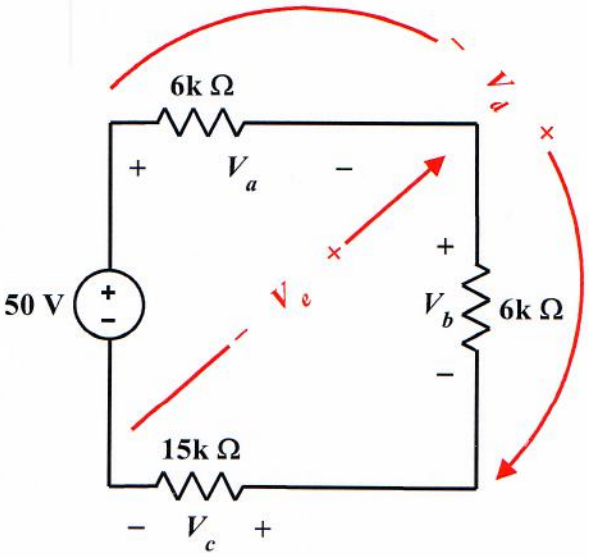
EE/EET 2240

Homework Problem #008



a. Use the voltage divider equation to determine V_a.

$$V_a = \frac{6k\Omega}{6k\Omega + 6k\Omega + 15k\Omega} \cdot 50V = \frac{100}{9} V \approx 11.111\,V$$

b. Use the voltage divider equation to determine V_b.

$$V_b = \frac{6k\Omega}{6k\Omega + 6k\Omega + 15k\Omega} \cdot 50V = \frac{100}{9} V \approx 11.111\,V$$

c. Use the voltage divider equation to determine V_c.

$$V_c = \frac{15k\Omega}{6k\Omega + 6k\Omega + 15k\Omega} \cdot 50V = \frac{250}{9} V \approx 27.778V$$

d. Determine the value of V_d.

$$V_d = -V_b - V_a = -\frac{100}{9} - \frac{100}{9} = -\frac{200}{9} \approx -22.222V$$

e. Determine the value of V_e.

$$V_e = V_b + V_c = \frac{100}{9} + \frac{250}{9} = \frac{350}{9} \approx 38.889V$$