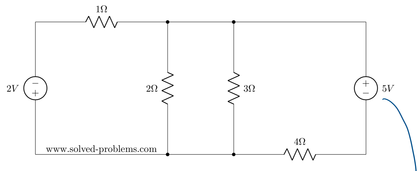
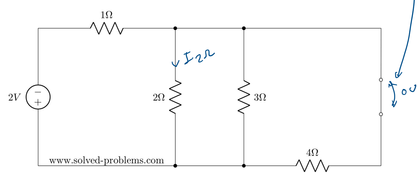
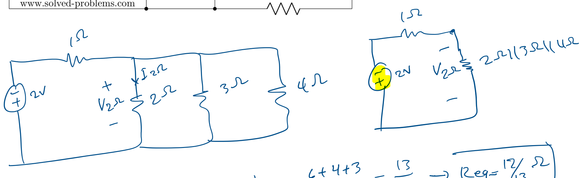
Find the current passing through the 2Ω resistor using superposition.



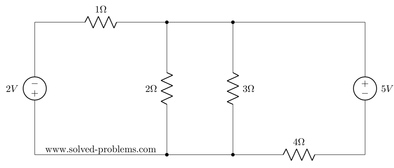


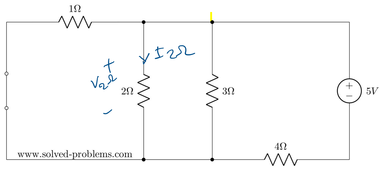


$$R_{eq} \Rightarrow \frac{1}{R_{eq}} = \frac{1}{2} + \frac{1}{3} + \frac{1}{4} = \frac{6+4+3}{12} = \frac{13}{12} \Rightarrow R_{eq} = \frac{12}{13}\,\Omega$$

$$V_{2\Omega} = -\frac{R_{eq}}{R_{eq}+1\Omega} \times 2V = -\frac{12/13}{12/13+1} \times 2 = -\frac{12}{12+13} \times 2 = -\frac{24}{25}\,V$$

$$I_{2\Omega} = \frac{V_{2\Omega}}{2\Omega} = -\frac{24/25}{2} = -\frac{12}{25}\,A = -0.48\,A \quad \text{due to 2V}$$

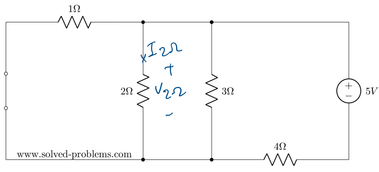




$$\frac{1}{R_{eq}} = \frac{1}{1\Omega} + \frac{1}{2\Omega} + \frac{1}{3\Omega} = \frac{6+3+2}{6} = \frac{11}{6}$$

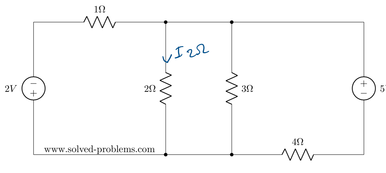
$$\Rightarrow R_{eq} = \frac{6}{11}\,\Omega$$

$$V_{2\Omega} = \frac{R_{eq}}{R_{eq}+4} \times 5V = \frac{6/11}{6/11+4} \times 5 = \frac{6}{6+44} \times 5 = \frac{6}{50} \times 5 = 0.6\,V$$



$$I_{2\Omega} = \frac{V_{2\Omega}}{2\Omega} = \frac{0.6}{2} = 0.3\,A \quad \text{due to 5V}$$

$$I_{2\Omega} = 0.3 - 0.48 = -0.18\,A$$



www.youtube.com/watch?v=3N1txlkQbZk
http://www.solved-problems.com/circuits/electrical-circuits-problems/resistive-circuits/1555/find-the-current-using-superposition/