Quiz 2

Consider the following circuit:

1. Find the potential at points A and B if the current source is suppressed.

\[ \text{6V across } 2\Omega + \left( \frac{3}{1} \left| \frac{2\Omega + 4\Omega}{4\Omega} \right| \right) = 8 \Omega \]

\[ A = 6\Omega - \frac{2}{8} \times 6\Omega = +4.5 \Omega \]

\[ B = 6\Omega - \frac{6}{8} \times 6\Omega = +1.5 \Omega \]

2. Find the potential at points A and B if the voltage source is suppressed. (Hint use symmetry!)

Now \( B = 0 \Omega \) since current is balanced:

Also easy to see that bottom mesh is \( \frac{1}{2} \) resistance of top mesh \( \Rightarrow 2B \)

\[ \Rightarrow 1A \text{ in top, } 2A \text{ in bottom} \]

\[ \Rightarrow A = -4V \]

3. What is the total potential from both sources at A and B?

Totals: \( A = \frac{1}{2} \text{V} \)

\[ B = 1.5 = \frac{3}{2} \text{V} \]