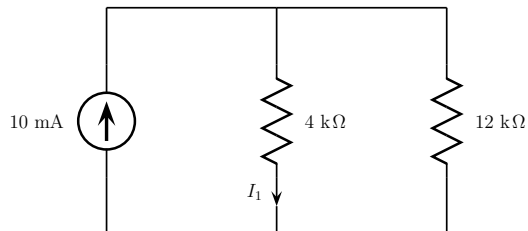


Preparation for Circuits

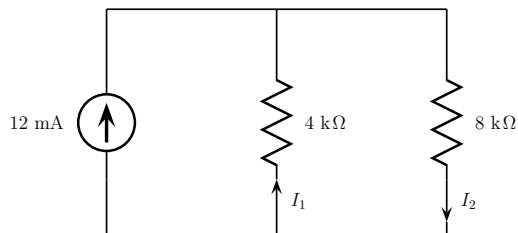
Concept Questions: Resistor Combinations

1. What is I_1 ?



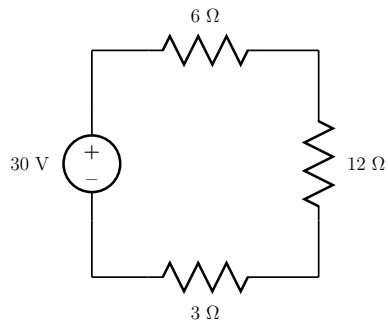
- (A) 10 mA
- (B) 7.5 mA
- (C) 5 mA
- (D) 2.5 mA

2. What are I_1 and I_2 ?



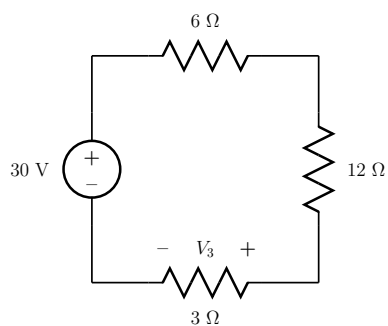
- (A) 8 mA, -4 mA
- (B) -4 mA, 8 mA
- (C) 4 mA, -8 mA
- (D) -8 mA, 4 mA

3. What is R_{EQ} for the three resistors?



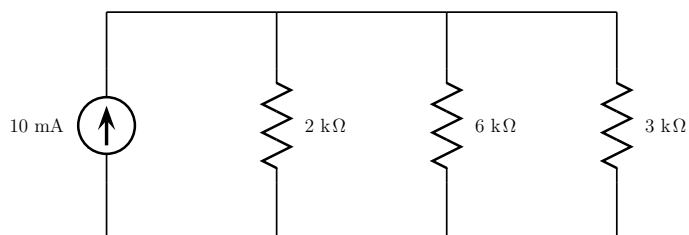
- (A) 18 Ω
- (B) 9 Ω
- (C) 21 Ω
- (D) 19 Ω

4. What is V_3 ?



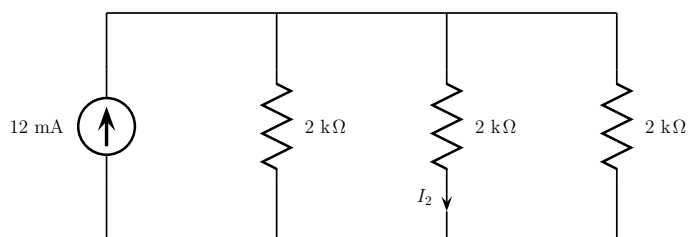
- (A) $\frac{30}{7}$ V
- (B) $-\frac{30}{7}$ V
- (C) $\frac{10}{7}$ V
- (D) $-\frac{10}{7}$ V

5. What is R_{EQ} for the three resistors below?



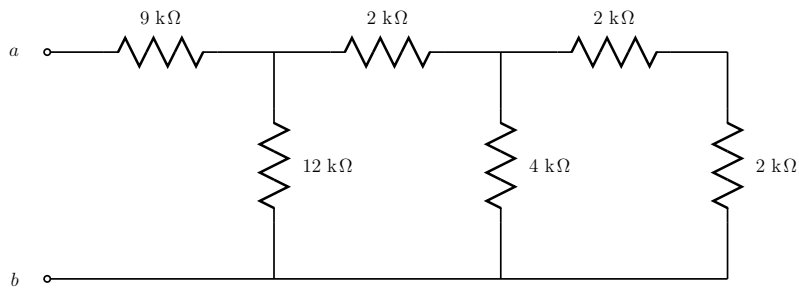
- (A) $\frac{36}{11}$ kΩ
- (B) 1 kΩ
- (C) 11 kΩ
- (D) $\frac{11}{36}$ kΩ

6. What is I_2 ?



- (A) 6 mA
- (B) 8 mA
- (C) 4 mA
- (D) 2 mA

7. What is R_{ab} ?



- (A) 12 kΩ
- (B) 6 kΩ
- (C) 15 kΩ
- (D) 9 kΩ

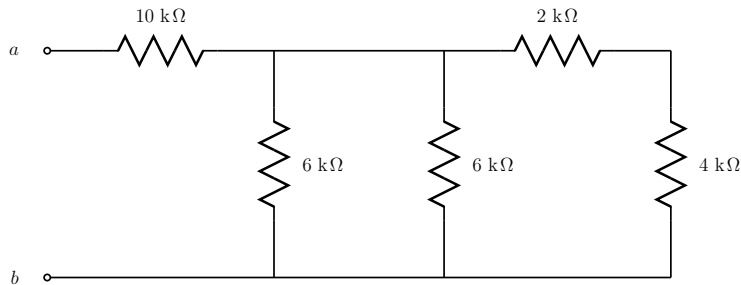
8. What resistor value would need to be added, in series, to two parallel 10 Ω resistors to make an overall resistance of 15 Ω?

- (A) 5 Ω
- (B) 10 Ω
- (C) 7.5 Ω
- (D) 25 Ω

9. **T** or **F**: Three resistors in series will have a larger overall resistance than any of the individual resistors.

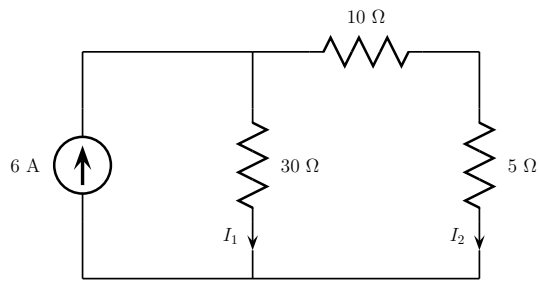
10. **T** or **F**: Three resistors in parallel will have a larger overall resistance than any of the individual resistors.

11. Find R_{ab} .



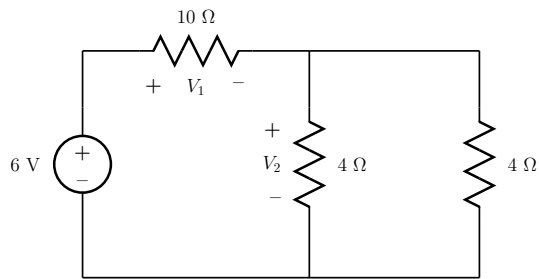
- (A) 15 kΩ
- (B) 6 kΩ
- (C) 12 kΩ
- (D) 9 kΩ

12. What is I_1 ?



- (A) 8 A
- (B) 2 A
- (C) 4 A
- (D) 6 A

13. What is V_2 ?



- (A) 2 V
- (B) 1 V
- (C) 4 V
- (D) 5 V

14. What is I_S ?

