Preparation for Circuits

Concept Questions: Ohm's Law and the Passive Sign Convention

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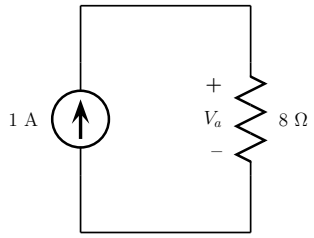
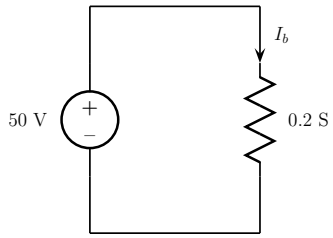
1. Calculate V_a:



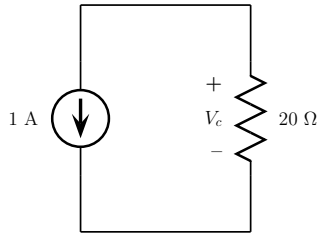
2. What is the power dissipated by the resistor in the previous problem?

3. Calculate I_b:



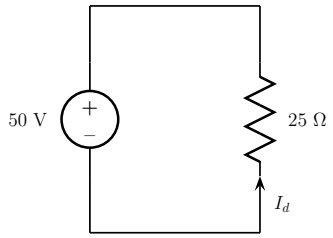
4. What is the power dissipated by the resistor in the previous problem?

5. Calculate V_c:



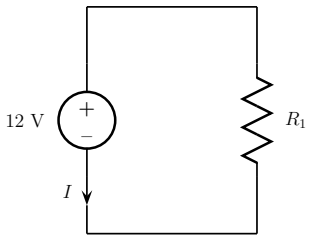
6. What is the power dissipated by the resistor in the previous problem?

7. Calculate I_d:



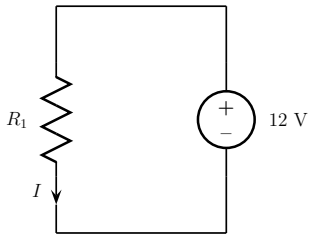
8. What is the power dissipated by the resistor in the previous problem?:

9. What is I if $R_1 = 40$ kΩ?



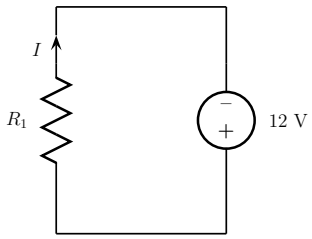
(A) 4.8 mA
(B) -4.8 mA
(C) 0.3 mA
(D) -0.3 mA

10. What is I if $R_1 = 40$ kΩ?



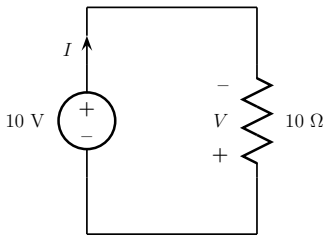
(A) 0.3 mA
(B) -4.8 mA
(C) -0.3 mA
(D) 4.8 mA

11. What is I if $R_1 = 40$ kΩ?



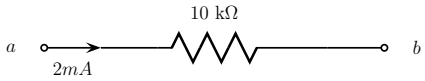
(A) -4.8 mA
(B) -0.3 mA
(C) 0.3 mA
(D) 4.8 mA

12. What are I and V?



(A) -1A, 10V
(B) 1A, -10V
(C) -1A, -10V
(D) 1A, 10V

13. What is the voltage across the resistor?



(A) 5 V, + @ a, - @ b
(B) 20 V, - @ a, + @ b
(C) 20 V, + @ a, - @ b
(D) 5 V, - @ a, + @ b