1. In the circuit diagram below, what are the correct readings of voltmeters \( V_1 \) and \( V_2 \)?

A) \( V_1 \) reads 2.0 V and \( V_2 \) reads 4.0 V  
B) \( V_1 \) reads 4.0 V and \( V_2 \) reads 2.0 V  
C) \( V_1 \) reads 3.0 V and \( V_2 \) reads 3.0 V  
D) \( V_1 \) reads 6.0 V and \( V_2 \) reads 6.0 V

2. Base your answer to the following question on the diagram below.

![Diagram](image1)

The voltage drop across \( R_1 \) is

A) 6 V  
B) 9 V  
C) 3 V  
D) 10 V

3. Base your answer to the following question on the electric circuit below. The switch is in the open position.

![Diagram](image2)

Compared to the potential drop across the 10.-ohm resistor, the potential drop across the 20.-ohm resistor is

A) less  
B) greater  
C) the same

4. The diagram below represents currents in a segment of an electric circuit.

![Diagram](image3)

What is the reading of ammeter \( A \)?

A) 1 A  
B) 2 A  
C) 3 A  
D) 4 A

5. In the diagram below of a parallel circuit, ammeter \( A \) measures the current supplied by the 110-volt source.

![Diagram](image4)

The current measured by ammeter \( A \) is

A) 1.0 A  
B) 0.10 A  
C) 5.5 A  
D) 11 A
Base your answers to questions 6 and 7 on the diagram of the circuit below.

6. If resistance $R_2$ were removed, the current in ammeter $A$ would
   A) decrease  B) increase  C) remain the same

7. The current in ammeter $A$ is
   A) 1.0 A  B) 2.0 A  C) 6.0 A  D) 8.0 A

8. In which circuit would current flow through resistor $R_1$, but not through resistor $R_2$ while switch $S$ is open?
   A)  
   B)  
   C)  
   D)  
9. In the circuit represented below, which switches must be closed to produce a current in conductor AB?

A) 1 and 4  
B) 2 and 3  
C) 1, 2, and 3  
D) 2, 3, and 4

10. The diagram below shows the current in a segment of a direct current circuit.

What is the reading of ammeter A?

A) 1 A  
B) 5 A  
C) 7 A  
D) 8 A

11. What is the current reading of ammeter A1?

A) 10.0 A  
B) 6.0 A  
C) 3.0 A  
D) 4.0 A

12. What is the potential difference across the source?

A) 440 V  
B) 220 V  
C) 120 V  
D) 60. V

13. Base your answer to the following question on the diagram below which represents two resistances (R1 and R2) and an ammeter connected to a constant 30. volt source. The combined resistance of the circuit is 6.0 ohms.

Ammeter A reads

A) 7.5 A  
B) 5.0 A  
C) 3.0 A  
D) 1.2 A

14. Base your answer to the following question on the diagram below which represents an electric circuit. The voltmeter, V, reads 12 volts.

Ammeter A should read

A) 6 A  
B) 2 A  
C) 3 A  
D) 9 A

15. When three 30-ohm resistors are connected in parallel across a 9-volt source, the total current is

A) 0.10 A  
B) 0.30 A  
C) 0.45 A  
D) 0.90 A