Name: _____

Series and Parallel Circuits Worksheet

Questions 1 and 2 refer to the following:

The diagram below represents an electric circuit consisting of four resistors and a 12-volt battery.
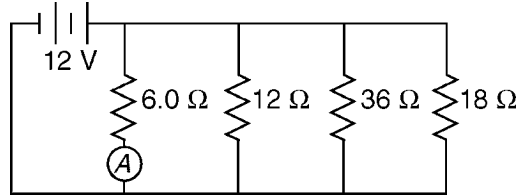

1)   What is the current measured by ammeter *A* shown in the diagram?

2)   What is the equivalent resistance of the circuit shown?

3)   A 6.0-ohm lamp requires 0.25 ampere of current to operate. In which circuit below would the lamp operate correctly when switch *S* is closed?
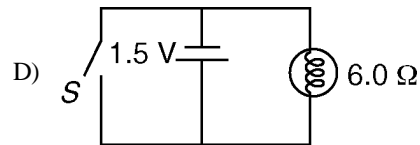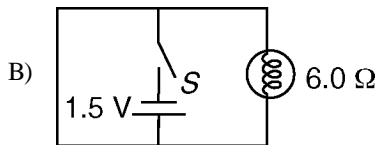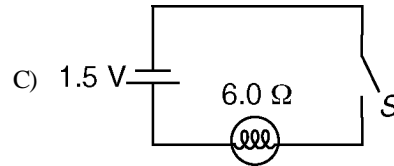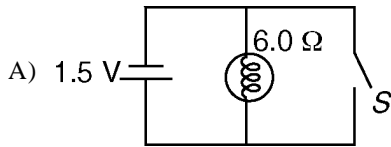
Questions 4 and 5 refer to the following:

A 50.-ohm resistor, an unknown resistor *R*, a 120-volt source, and an ammeter are connected in a complete circuit. The ammeter reads 0.50 ampere.
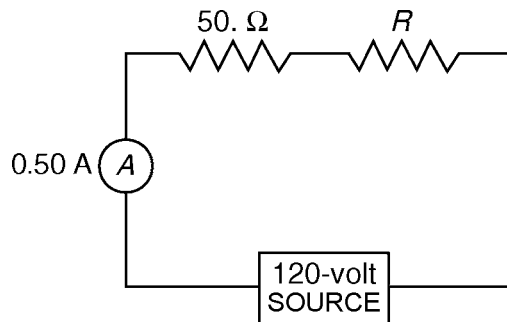
4) Calculate the equivalent resistance of the circuit shown. [*Show all work, including the equation and substitution with units.*]

5) Determine the resistance of resistor R shown in the diagram.

Questions 6 through 8 refer to the following:

A 3.0-ohm resistor, an unknown resistor, R, and two ammeters, A_1 and A_2, are connected as shown below with a 12-volt source. Ammeter A_2 reads a current of 5.0 amperes.
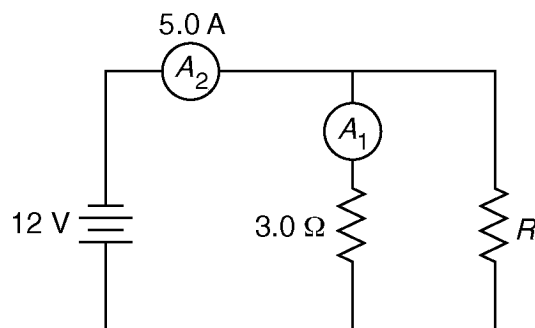
6) Determine the equivalent resistance of the circuit shown.

7) Calculate the current measured by ammeter A_1 in the diagram shown. [*Show all work, including the equation and substitution with units.*]

8) Calculate the resistance of the unknown resistor, R in the diagram shown. [*Show all work, including the equation and substitution with units.*]