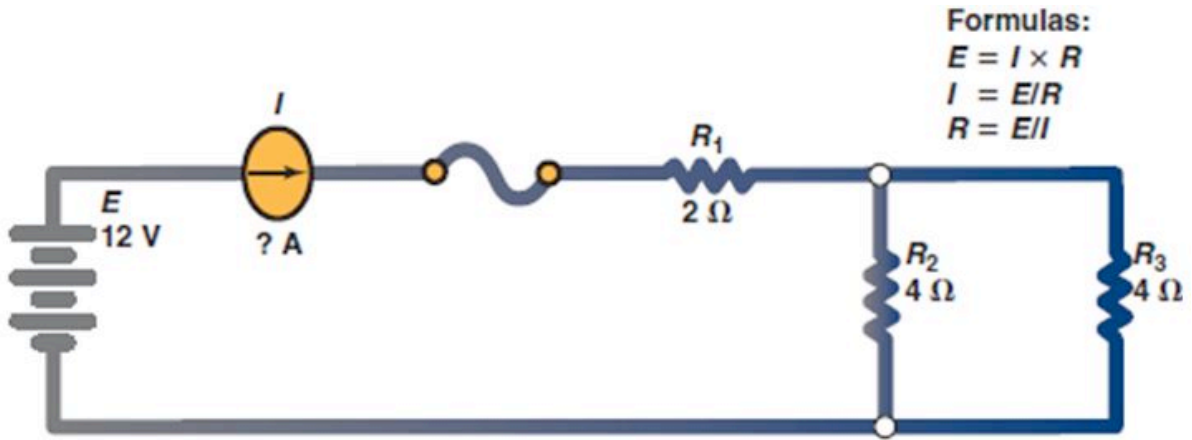Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) See **Figure 8-8** to solve for total resistance (R_T) and total current (I).   1) _____
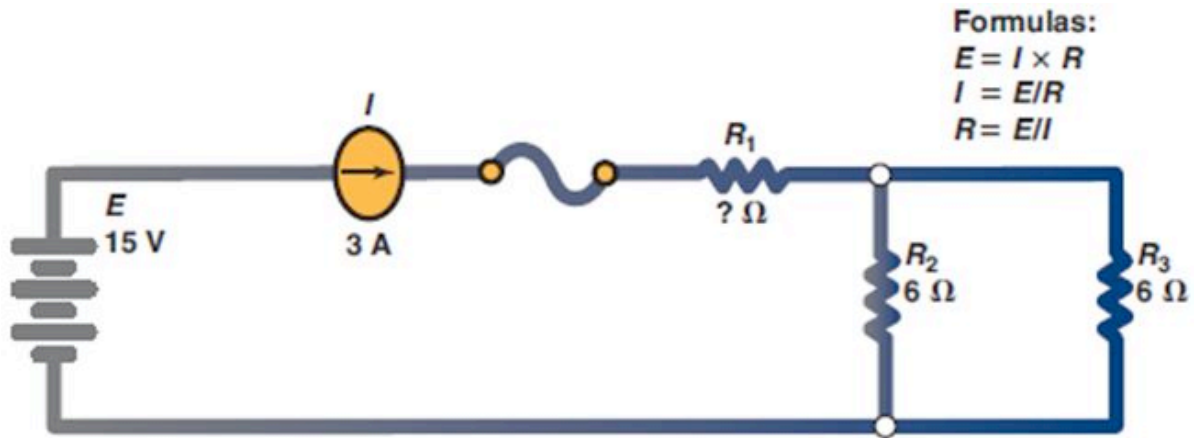

Formulas:
$E = I \times R$
$I = E/R$
$R = E/I$

E = 12 V
$R_1 = 2\ \Omega$
$R_2 = 4\ \Omega$
$R_3 = 4\ \Omega$
$R_T = 4\ \Omega$
I =

A) 10 ohms, 1.2 A
B) 4 ohms, 3 A
C) 6 ohms, 2 A
D) 2 ohms, 6 A

2) See **Figure 8-11** to solve for R_1 and total resistance (R_T).　　　　2) _____
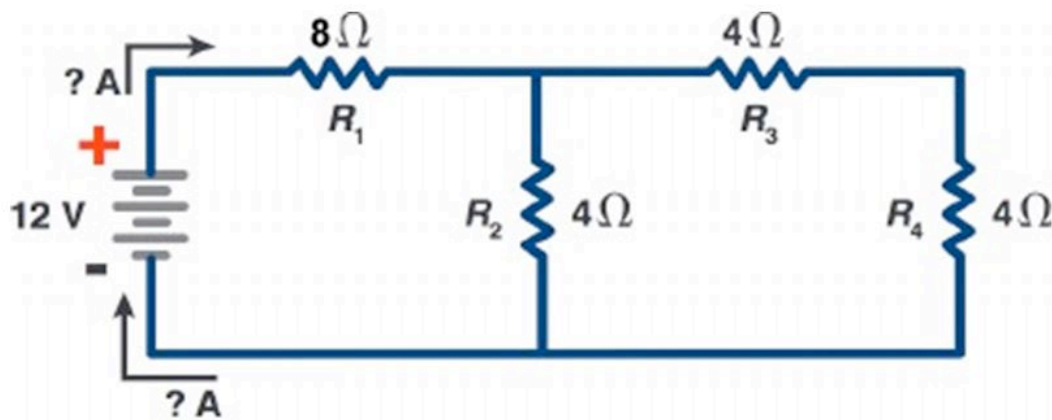
Formulas:
$E = I \times R$
$I = E/R$
$R = E/I$

E
15 V
I
3 A
R_1
? Ω
R_2
6 Ω
R_3
6 Ω

$E = 15$ V
$R_1 =$
$R_2 = 6\ \Omega$
$R_3 = 6\ \Omega$
$R_T =$
$I = 3$ A

A) 3 ohms; 15 ohms
B) 1 ohm; 15 ohms
C) 2 ohms; 5 ohms
D) 5 ohms; 5 ohms

3) Calculate the total resistance (R_T) for the circuit in the figure below and determine the total　　　3) _____
current (I_t).

? A
+
12 V
-
? A
8 Ω
R_1
R_2 4 Ω
4 Ω
R_3
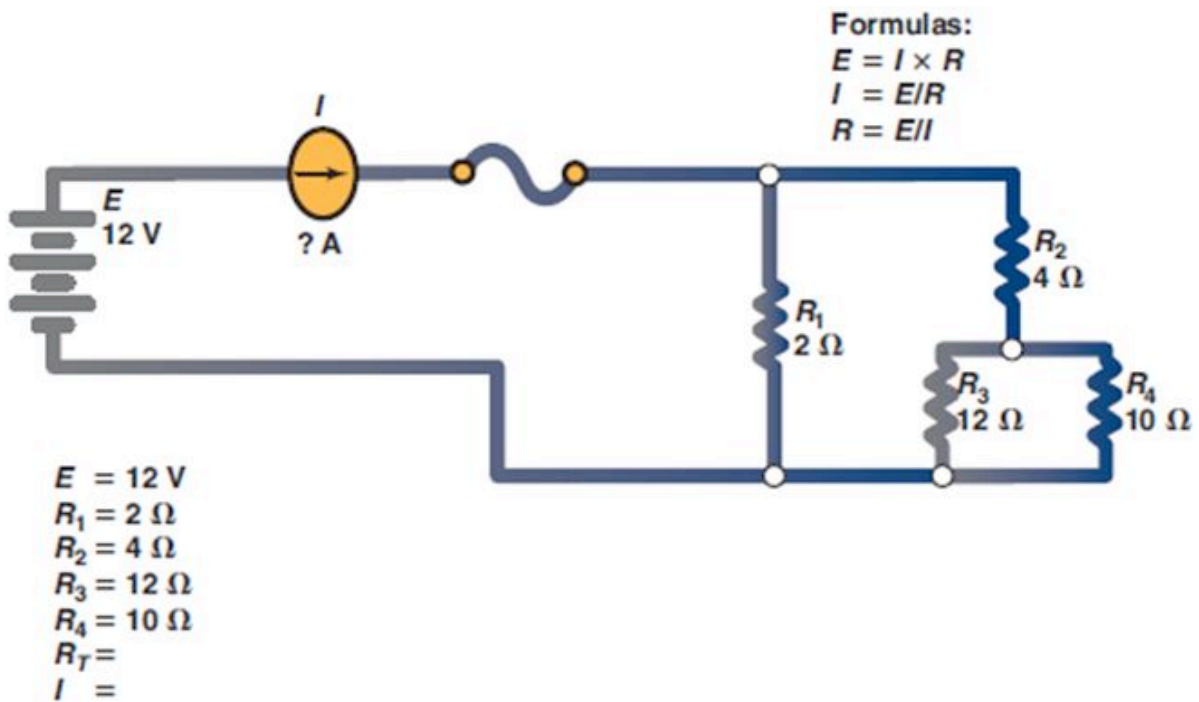R_4 4 Ω

A) 1 A
B) 2 A
C) 6 A
D) 10 A

4) Which of the following is true regarding series-parallel circuits?   4) _____
    A) Voltages are always equal across each load divided by the source voltage in the branches.
    B) Current is equal throughout the circuit.
    C) Only one current path is possible.
    D) Source voltage minus any voltage drop across loads wired in series is the parallel voltage.

5) Half of the dash is dark. Technician A says that a defective dash light dimmer could be the cause,   5) _____
because it is in series with the bulbs that are in parallel. Technician B says that one or more bulbs
could be defective. Which technician is correct?
    A) Technician A only
    B) Technician B only
    C) Both technicians
    D) Neither technician
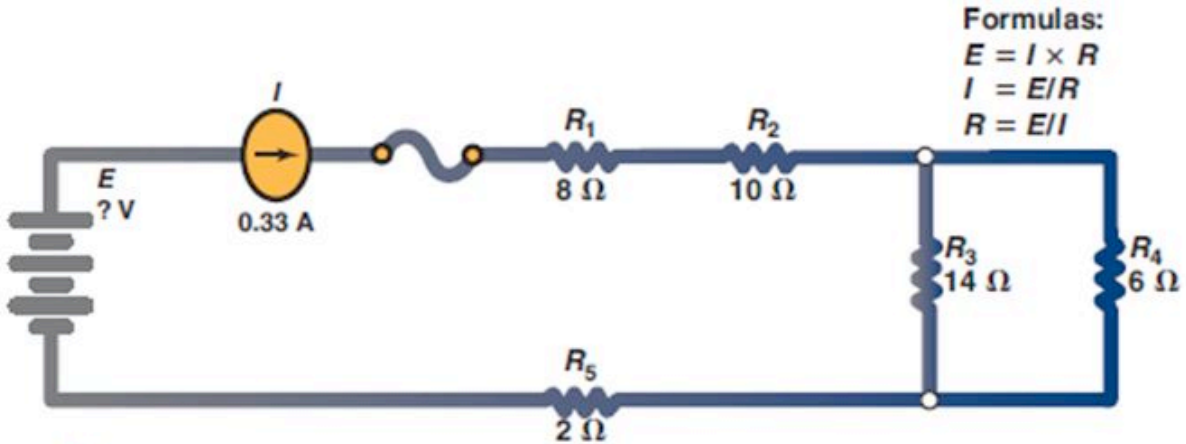
6) See **Figure 8-14** to solve for total resistance (R_T) and total current (I_t).   6) _____

Formulas:
$$E = I \times R$$
$$I = E/R$$
$$R = E/I$$

I

E
12 V

? A

R_2
4 Ω

R_1
2 Ω

R_3
12 Ω

R_4
10 Ω

$E = 12\ V$
$R_1 = 2\ \Omega$
$R_2 = 4\ \Omega$
$R_3 = 12\ \Omega$
$R_4 = 10\ \Omega$
$R_T =$
$I =$

    A) 1.5 ohms; 8 amperes
    B) 18 ohms; 0.66 amperes
    C) 6 ohms; 2 amperes
    D) 5.5 ohms; 2.2 amperes

7) See **Figure 8-13** to solve for the value of E and total resistance (R_T). 7) _____
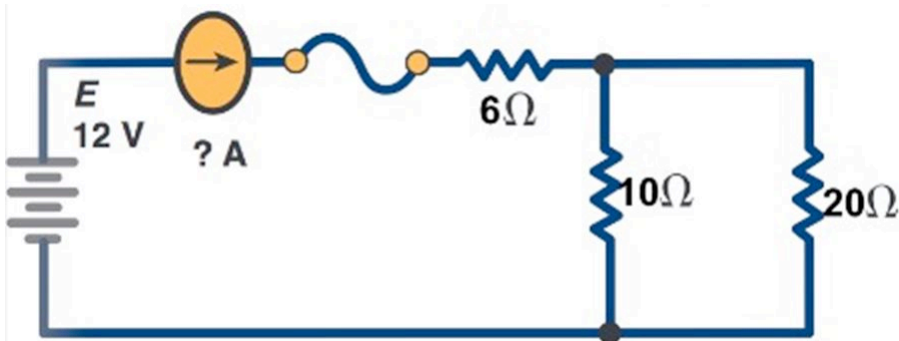
Formulas:
$E = I \times R$
$I = E/R$
$R = E/I$

$E =$
$R_1 = 8\,\Omega$
$R_2 = 10\,\Omega$
$R_3 = 14\,\Omega$
$R_4 = 6\,\Omega$
$R_5 = 2\,\Omega$
$R_T =$
$I = 0.33\,A$

A) 13.2 volts; 40 ohms
B) 11.2 volts; 34 ohms
C) 8 volts; 24.2 ohms
D) 8.6 volts; 26 ohms

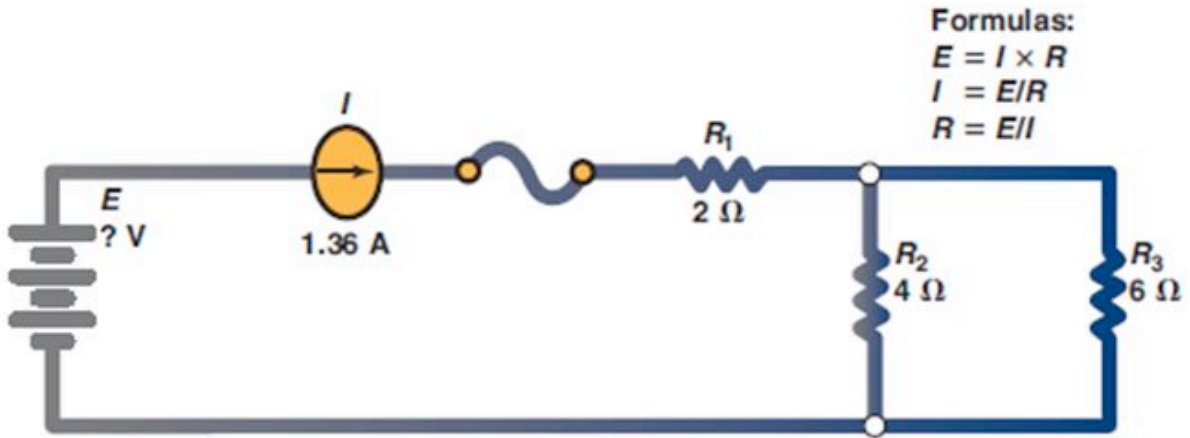8) Calculate the current flow in this circuit. (Round off to 2 decimal points.) 8) _____

A) About 0.95 amps
B) About 0.33 amps
C) About 3 amps
D) About 1.05 amps

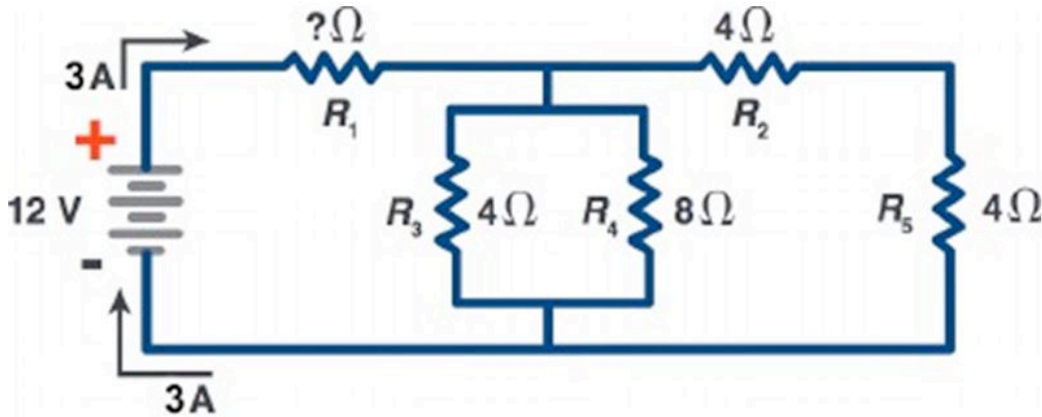9) See **Figure 8-10** to solve for voltage (E) and total resistance (R_T).   9) _____

Formulas:
$$E = I \times R$$
$$I = E/R$$
$$R = E/I$$

R_1 $2\,\Omega$

R_2 $4\,\Omega$

R_3 $6\,\Omega$

E

$? V$

I 1.36 A

$E =$
$R_1 = 2\,\Omega$
$R_2 = 4\,\Omega$
$R_3 = 6\,\Omega$
$R_T =$
$I = 1.36\ A$

A) 16.3 volts; 12 ohms
B) 3.3 volts; 2.4 ohms
C) 1.36 volts; 1 ohm
D) 6 volts; 4.4 ohms

10) Determine the unknown resistor value in the figure below and determine the value of R_1.   10) _____

$? \Omega$ $4\,\Omega$

3 A

R_1 R_2

12 V

R_3 $4\,\Omega$ R_4 $8\,\Omega$ R_5 $4\,\Omega$

3 A

A) $1\,\Omega$
B) $2\,\Omega$
C) $3\,\Omega$
D) $4\,\Omega$

1) B
   Page Ref: 87-88
2) C
   Page Ref: 87-88
3) A
   Page Ref: 87-88
4) D
   Page Ref: 96-87
5) B
   Page Ref: 86-87
6) A
   Page Ref: 87-88
7) C
   Page Ref: 87-88
8) A
   Page Ref: 87-88
9) D
   Page Ref: 87-88
10) B
   Page Ref: 87-88