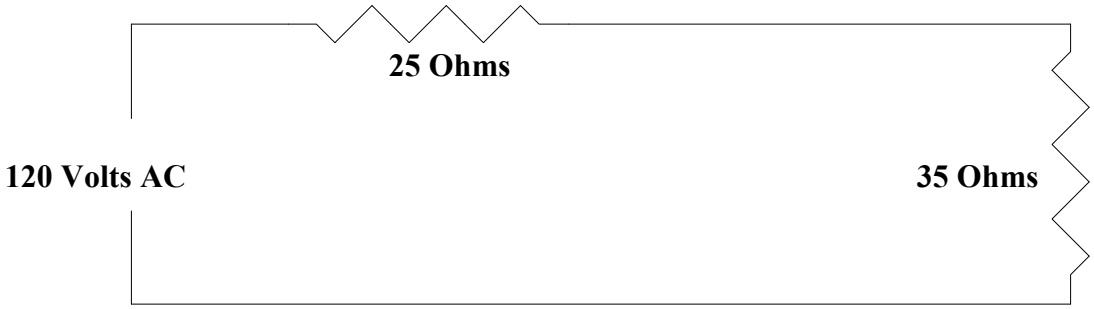
NAME:_____ DATE:_____
(Please Print)

RESISTOR NETWORK AND OHMS LAW *PRACTICE* EXAM
(See formulas at the back of this exam)



1. Based on the drawing above, what is the total circuit resistance?

Answer_____

2. Based on the drawing above, what is the current flow in the circuit?

Answer_____

3. Based on the drawing above, what is the voltage drop across the 25 ohm resistor?

Answer_____

4. Based on the drawing above, what is the total circuit resistance?

Answer_____

5. Based on the drawing above, what is the total current flow in the circuit?

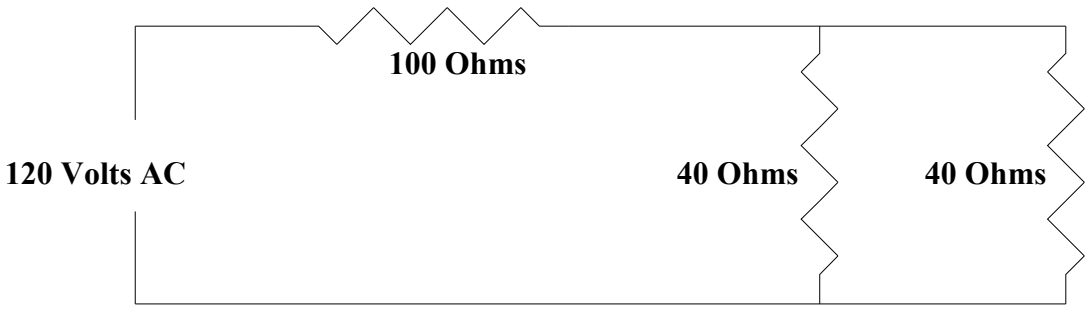
Answer_____

6. Based on the drawing above, what is the current flow through the 6 ohm resistor?

Answer_____

7. Based on the drawing above, how much power is consumed by the 12 ohm resistor?

Answer_____



8. Based on the drawing above, what is the total circuit resistance?

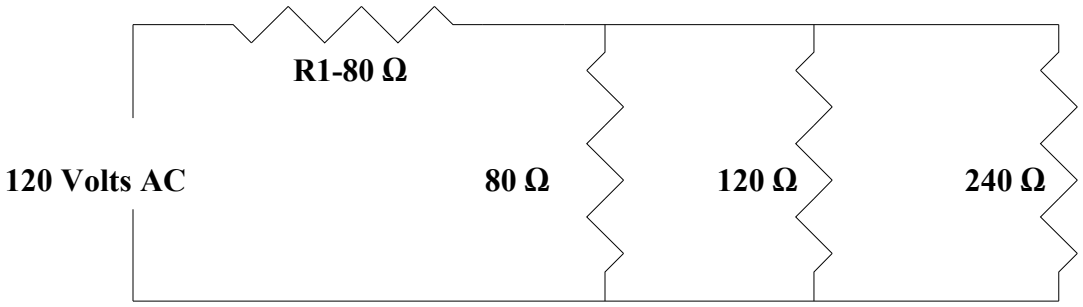
Answer_____

9. Based on the drawing above, what is the total current flow in the circuit?

Answer_____

10. Based on the drawing above, what is the voltage across one of the 40 ohm resistors?

Answer_____

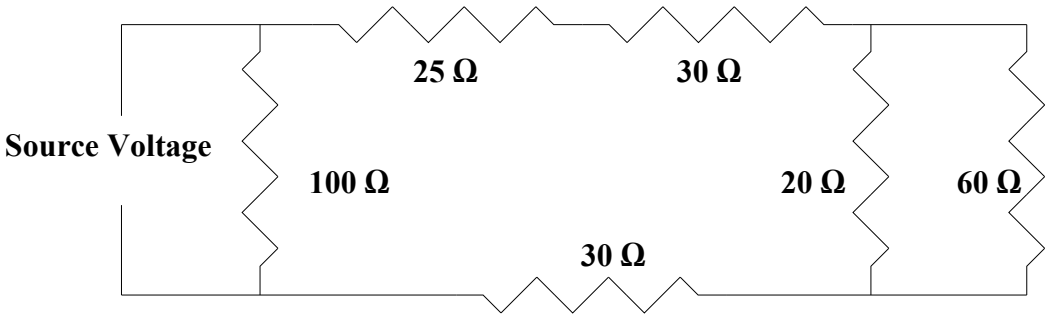


11. Based on the above drawing, how much current is flowing through the 120 ohm resistor?

Answer_____

12. Based on the above drawing, what is the voltage drop across R1?

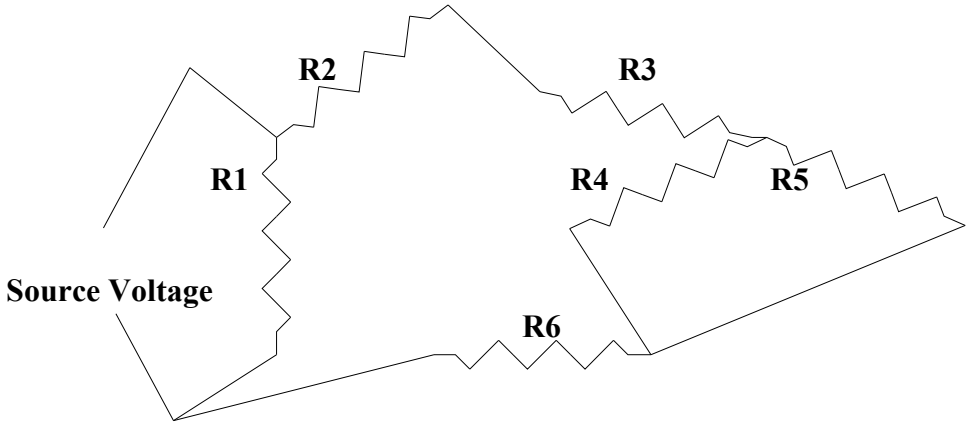
Answer_____



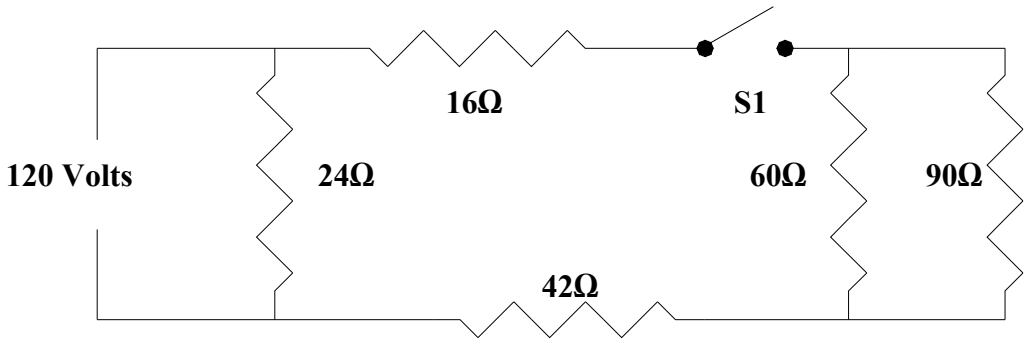
13. Based on the drawing above, what is the equivalent circuit resistance?

Answer_____

14. Take a look at the resistor network below. What do you notice about this diagram?



Answer_____

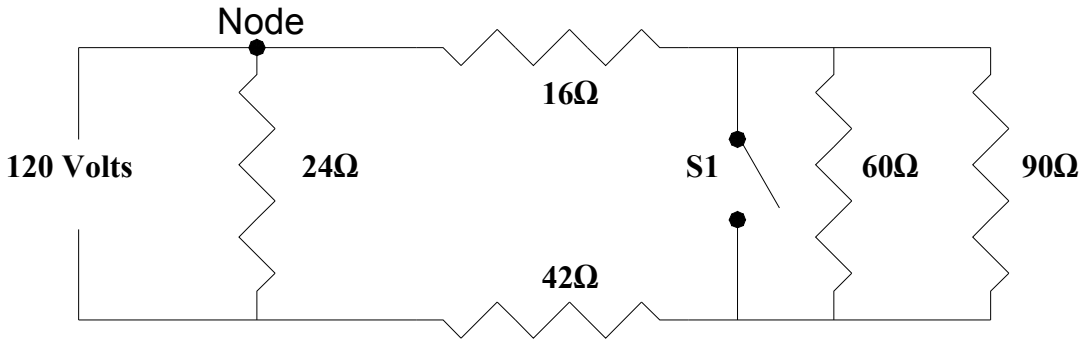


15. Based on the drawing above, what is the equivalent circuit resistance if S1 is closed?

Answer_____

16. Based on the drawing above, what is current flow through the circuit if S1 is open?

Answer_____



17. Based on the drawing above, what is the equivalent circuit resistance if S1 is closed?

Answer_____

18. Based on the drawing above, what is the current flow through the 16 ohm resistor if S1 is open?

Answer_____

Electrical Exam Formulas

1) $P = I \times E$, $P(3\ Phase) = I \times E \times 1.73$

2) $E = I \times R$

3) $P = I \times E \times (Pf)$

4) $Vd = (2 \times K \times D \times I)/CM$

5) $Vd\ (3\ Phase) = (1.73 \times K \times D \times I)/CM$

6) Parallel Resistors

$$Rt = \frac{1}{1/R1+1/R2+\ldots 1/Rn}$$

OR

$$Rt = \frac{R1 \times R2}{R1+R2}$$

7) Series Resistors

$Rt = R1+R2+\ldots Rn$

P= Power in watts
I=Current in amps
E=Voltage in volts
R=Resistance in ohms, Rt=Total resistance
Vd=Voltage drop in volts
Pf=Power factor
D=Distance (one way) in feet
CM=Circular mils of wire (Ch. 9, Table 8)
K=Resistance of a circular mil-foot (Approx. 12.9 for Cu, 21.2 for Al)
HP=746 Watts