

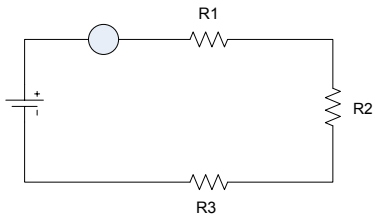
Applied Science and Technology

Worksheet #2

Total, or equivalent, resistance

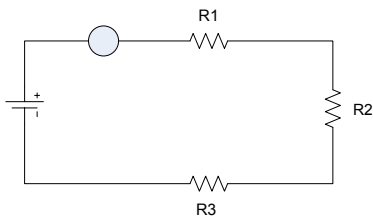
1. Question #1

Determine the total, or equivalent, resistance of the circuit below when $R_1 = 200\Omega$, $R_2 = 300\Omega$, and $R_3 = 150\Omega$. Show all work.



Question #2

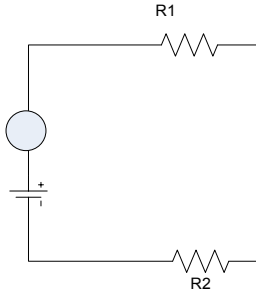
The schematic diagram below represents a circuit consisting of a power source, an ammeter, and three resistors.



The value of $R_1 = 200\Omega$, $R_2 = 300\Omega$, and $R_{eq} = 600\Omega$. What is the value of resistor R_3 ?

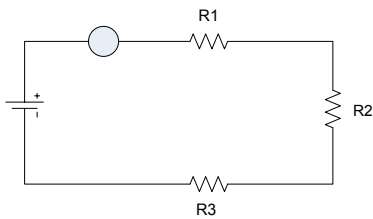
Question #3

Refer to the schematic diagram below and calculate the value of the potential difference at the source (V_T) when the reading on the ammeter is 2 amp, $R_1=15\Omega$, and $R_2 = 45\Omega$.



Question #4

The schematic diagram below represents a circuit consisting of a power source, an ammeter, and three identical resistors. The equivalent resistance is 360Ω .

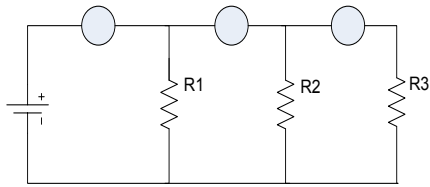


a) What is the value of resistor R_1 ?

b) What is the current intensity going through the circuit when the voltage at the source is 120v?

Question #5

Refer to the diagram below.

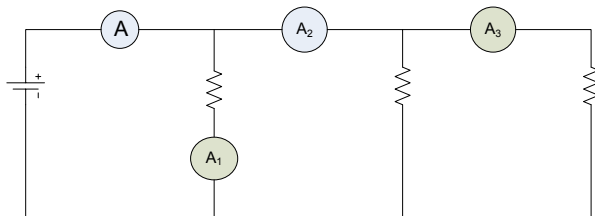


a) Determine which ammeter will indicate the *lowest* current intensity. Explain.

b) What is the value of R_{eq} when $R_1 = 20\Omega$, $R_2 = 30\Omega$, and $R_3 = 60\Omega$?

Question #6

The schematic diagram below represents a circuit consisting of a power supply, four ammeters and three resistors.



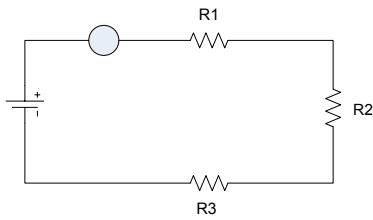
When ammeter A = 3 amps, and the resistors have identical values, what is the reading on each ammeter? Explain.

Homework

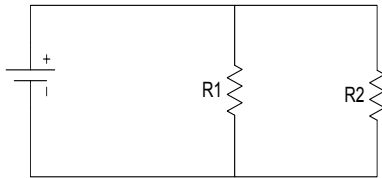
Question #1

Refer to the schematic diagrams below and determine the value of R_{eq} .

a) $R_1 = 25 \Omega$, $R_2 = R_3 = 60 \Omega$



b) $R_1 = 90 \Omega$ and $R_2 = 60 \Omega$



Question #2

The diagram below represents a circuit consisting of three resistors and three ammeters. Which ammeter indicates the greatest current intensity?

