

Ohm's Law Worksheet - Solutions

1 a.

Given $I = 2 \text{ A}$
 $R = 3 \text{ } \Omega$

Equation $V = I \times R$
 $V = 2 \times 3$
 $V = 6 \text{ V}$

1 b.

Given $I = 5 \text{ A}$
 $V = 10 \text{ V}$

Equation $R = V / I$
 $R = 10 / 5$
 $R = 2 \text{ } \Omega$

1 c.

Given $V = 24 \text{ V}$
 $R = 12 \text{ } \Omega$

Equation $I = V / R$
 $I = 24 / 12$
 $I = 2 \text{ A}$

1 d.

Given $I = 6.5 \text{ A}$
 $R = 4.2 \text{ } \Omega$

Equation $V = I \times R$
 $V = 6.5 \times 4.2$
 $V = 27.3 \text{ V}$

1 e.

Given $I = 3.3 \text{ A}$
 $V = 24 \text{ V}$

Equation $R = V / I$
 $R = 24 / 3.3$
 $R = 7.3 \text{ } \Omega$

1 f.

Given $V = 60 \text{ V}$
 $R = 15 \text{ } \Omega$

Equation $I = V / R$
 $I = 60 / 15$
 $I = 4 \text{ A}$

1 g.

Given $I = 5.5 \text{ A}$
 $V = 32.0 \text{ V}$

Equation $R = V / I$
 $R = 32 / 5.5$
 $R = 5.8 \text{ } \Omega$

1 h.

Given $V = 3.0 \text{ V}$
 $R = 0.6 \text{ } \Omega$

Equation $I = V / R$
 $I = 3 / 0.6$
 $I = 5 \text{ A}$

1 i.

Given $I = 0.05 \text{ A}$
 $R = 0.2 \text{ } \Omega$

Equation $V = I \times R$
 $V = 0.05 \times 0.2$
 $V = 0.01 \text{ V}$

1 j.

Given $I = 100 \text{ A}$
 $V = 230 \text{ V}$

Equation $R = V / I$
 $R = 230 / 100$
 $R = 2.3 \text{ } \Omega$

2

Given $I = 3 \text{ A}$
 $R = 50 \text{ } \Omega$

Equation $V = I \times R$
 $V = 3 \times 50$
 $V = 150 \text{ V}$

3.

Given $V = 120 \text{ A}$
 $R = 150 \text{ } \Omega$

Equation $I = V / R$
 $I = 120 / 150$
 $I = 0.8 \text{ A}$

4.

Given $I = 3.3 \text{ A}$
 $V = 120 \text{ V}$

Equation $R = V / I$
 $R = 120/3.3$
 $R = 36.4 \text{ } \Omega$

5

Given $I = 2.3 \text{ A}$
 $V = 120 \text{ V}$

Equation $R = V / I$
 $R = 120/2.3$
 $R = 52.2 \text{ } \Omega$

6.

Given $V = 9.2 \text{ A}$
 $I = 0.5 \text{ } \Omega$

Equation $R = V / I$
 $R = 9.2/0.5$
 $R = 18.4 \text{ } \Omega$

7.

Given $R = 1500 \text{ } \Omega$
 $V = 67.5 \text{ V}$

Equation $I = V / R$
 $I = 67.5/1500$
 $I = 0.045 \text{ A}$

8

Given $I = 0.25 \text{ A}$
 $V = 220 \text{ V}$

Equation $R = V / I$
 $R = 220/0.25$
 $R = 880 \text{ } \Omega$

9.

Given $V = 120 \text{ V}$
 $I = 2.75 \text{ A}$

Equation $R = V / I$
 $R = 120/2.75$
 $R = 43.6 \text{ } \Omega$

10.

If voltage is increases when resistance stays constant, current must increase.

11

If resistance is increases and the voltage stays constant, current must decrease.