Use the formula sheet to guide you through the problems.

1. In a simple circuit the current is found to be 8 amps and the resistance is found to be 0.5 Ω . Find the potential difference (the voltage)?



2. What is the power of an item that uses 4 amps and 4 volts during its use?

$$P=VI$$

= $4x4$
 $P=16\omega$

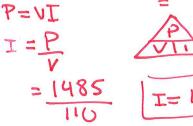


3. Find the current intensity of a device that uses 178 200 J after being used for 2 minutes. It was plugged into a common household plug of 110 V.



$$E = P = E$$

$$= 178200 \quad P = 1485W$$



4. Most household outlets provide 110 V. One of the circuits is protected by a 15 A fuse. What is the maximum number of 100 W light bulbs that could be used on this circuit?

5. How much energy is being consumed if a 100 W light bulb is used for 45 minutes? $45 \times 60 = 27005$

6. Determine how many kWh each of the following items are using.

Toaster using 7.1 kW for 30 min.

A 1375W hair dryer being used for 10 min. 10/60 = 0.16 h

A heater that uses 220 V and 22 A. Used for 1 day, all day.

Use the following information to answer the next two questions:

Digit	0	1	2	3	4	5	6	7	8	9		
Colour	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White	Gold	Silver
Tolerance											±5%	±10%

1. The four coloured bands on a resistor are: red, yellow, orange, silver.

Give the value of the resistor: 24 000 1 ± 10%.

What is it's range?

10% = 2400 B

21600A to 26400A

2. The four coloured bands on a resistor are: green, violet, red, gold.

Give the value of the resistor: 5700 a ± 5%

What is it's range?

5% = 2851

5415-12 to 5985-12

3. A resistor has a value of 970 $\Omega \pm 10\%$ Give the colours of its four identifying bands:

a) 1st Band: White

b) 2nd Band: Violet

c) 3rd Band: Brown

d) 4th Band: Silver

Problem solving:

When you came home from school you decided to review for your Applied Science Exam ©, you:

Tracticed old test questions for 54 minutes, while listening to the radio (it uses 110V and 2.4 A).

Finished today's review sheet. It was getting dark so you used a 100 W light and finish in 30 min.

Took a shower that used 2.4 kWh (kilowatt hours)

Calculate the **total** amount of energy that you used? (1 kWh = 3 600 000 J)

1 P=VI = 2.4 x 110 = Z64W

54 x 60 = 324 05

E=Pat= 264 x 3240 = 855 360]

 $P=V1=2.4 \times 110=264W$ 54/60=0.9h

0.264 x0.9h = 0.2376 kWh 2 0.1kwx 0.5h = 0.05 kwh

30x60=18005 E=Pat = 100x 1800 = 180 0003

heek 2.6876 kwh

 $3) 2.4 \times 3600000 = 8646000 = 96753667$

Make sure to review the kWh questions from your assignment and test.