

## Solution for # 3

3. We know the unit for energy is the joule (J). It is a relatively small unit. The amount of energy you consume in your home over a one month period is rather large - so we need a larger unit of energy!

Now the kJ or MJ could work but we don't use them for whatever reason.

Instead we use the Power equation  $P = \frac{W}{t}$

$$\text{or } 1 \text{ watt} = \frac{1 \text{ Joule}}{1 \text{ second}}$$

$$\text{so } 1 \text{ J} = 1 \text{ W} \cdot \text{s}$$

↑            ↑  
x 1000      x 3600s (to convert to hours)

(to convert to kW) ↓

$$1(\text{J})(\times 1000)(\times 3600) = 1 \text{ Kw} \cdot \text{h}$$

$$\boxed{3.6 \times 10^6 \text{ J} = 1 \text{ Kw} \cdot \text{h}}$$

remember if you multiply one side of an equation by  $3.6 \times 10^6$  you must also multiply the other side by  $3.6 \times 10^6$