**THE STEPS TO SOLVE PHYSICS PROBLEMS**

In physics, setting out is really important and marks are allocated as to how you set out your answers.

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After reading the questions, the steps you should use to complete all calculations are as follows:

Step 1: Write down what you need to find.

Step 2: Write down the information given.

Step 3: Select the appropriate equation from the Formula And Data Sheet and write this down

Step 4: Substitute the given quantities into the equation

Step 5: Simplify the equation

Step 6: Express the answer in the appropriate units and significant figures

**Example**

2.00 L of water is placed in a plastic kettle and the element is switched on. If the element operates at 1.00 x 103 W and at 90.0 % efficiency for 10.0 s and assuming no heat transfer to the kettle, find the rise in the water temperature.

Solution

P = 1000 W t = 10 s Efficiency = 90 % m = 2 L = 2 kg C = 4180 J kg-1 K-1  ΔT = ?

Q = E = P x t = 1000 x 10 = 10000 J

If 90 % efficiency then only 90 % of Q is transferred

Qeffective = 90 x Q = 90 x 10000 = 9000 J

100 100

Q = m x C x ΔT

9000 = 2 x 4180 x ΔT

ΔT = 9000 = 9000 = 1.08 K

2 x 4180 8360

**Note the answer must be given in 3 significant figures.**