Homework	Due Date : 1/12/17
Student Name ………………………	

Instructions:

- Please write your answers on the attached sheet.
- You must show **ALL** of your working out!
- Use your formulae notebook and/or MathsWatch to help (vle.mathswatch.co.uk).
- Login details for MathsWatch in order to watch the videos are as follows:

  https://vle.mathswatch.co.uk/vle/

  Example Username: 13smithb@belmont

  Example Password: Belmont1

Useful Clips:

Clip 142   - Compound Units (Grade 4)

Clip 150   - Pythagoras' Theorem (Grade 4)

Clip 168   - Trigonometry (Grade 5)

Clip 175   - Harder Tree Diagrams (Grade 5)

Clip 187   - Box Plots (Grade 6)

Clip 185   - Probability Using Venn Diagrams (Grade 6)

Q1.

Ishmael is a salesperson for a company.

His monthly wage is made up of his fixed basic wage plus commission.
His commission for a month is a fixed percentage of the sales he makes that month.

The table gives some information about his monthly wages.

Month	Monthly wage (£)	Sales (£)
June	1700	20 000
July	2200	30 000
August	2050	27 000

In September, Ishmael's monthly wage was £1850

Work out his sales, in £, for September.

(Total for question = 4 marks)

Q2.

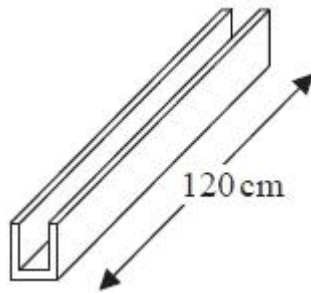The diagram shows a metal bar in the shape of a prism.

Diagram **NOT** accurately drawn

120 cm

The length of the metal bar is 120 cm.
The cross section of the metal bar is shown below.
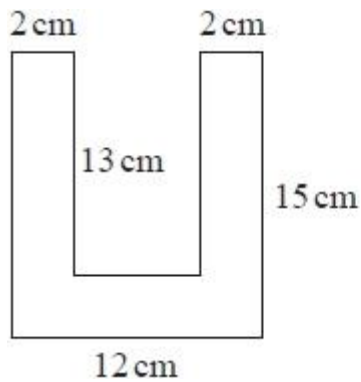

2 cm   2 cm

13 cm

15 cm

12 cm

Diagram **NOT** accurately drawn

All corners are right angles.

The metal bar is made from steel with density 8 g/cm³.

Sean has a trolley.
The trolley can carry a maximum mass of 250kg.

How many metal bars can the trolley carry at the same time?
You must show your working.

....

(Total for question = 5 marks)
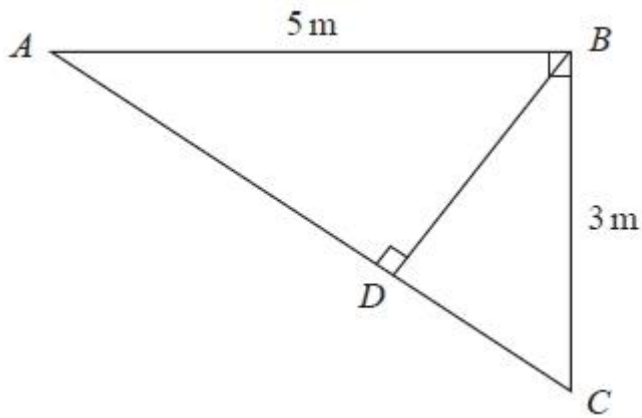
Q3.

The diagram represents a metal frame.

Diagram **NOT** accurately drawn

The frame is made from four metal bars, *AB*, *AC*, *BC* and *BD*.

Angle *ABC* = angle *ADB* = 90°
AB = 5 m
BC = 3 m

Work out the total length of the four metal bars of the frame.
Give your answer correct to 3 significant figures.

.... m
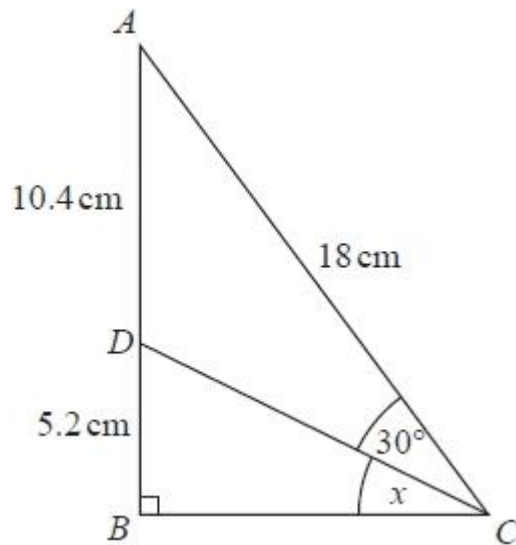
(Total for question = 5 marks)

Q4.

Diagram **NOT** accurately drawn

ABC is a right-angled triangle.
D is a point on *AB*.

Angle *ACD* = 30°
AD = 10.4 cm
DB = 5.2 cm
AC = 18 cm

Work out the size of the angle marked *x*.
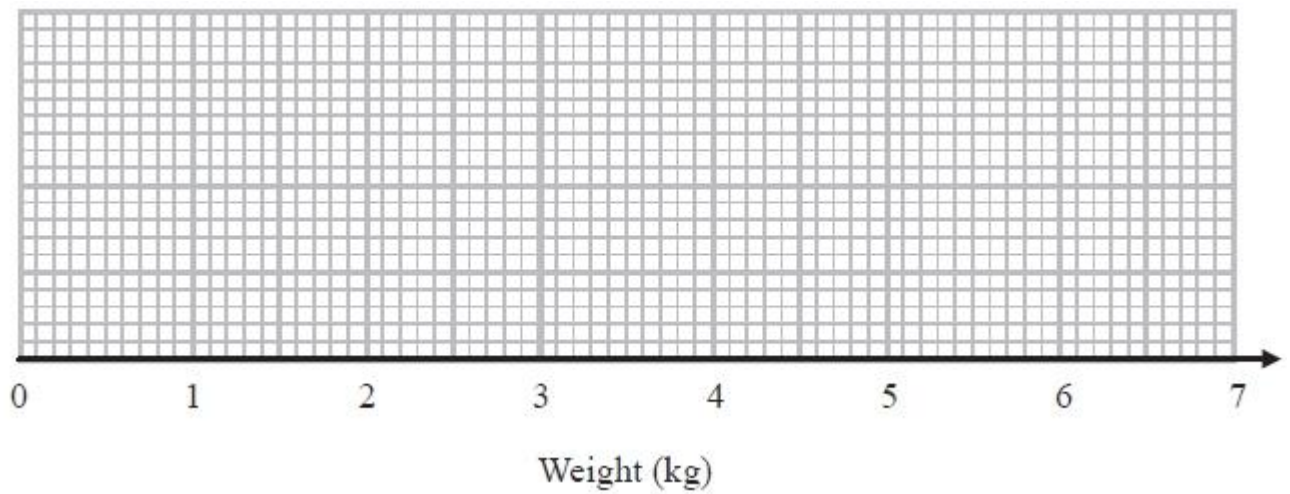Give your answer correct to 1 decimal place.

.... °

(Total for question = 4 marks)

Q5.

The table gives information about the weights of 60 parcels.

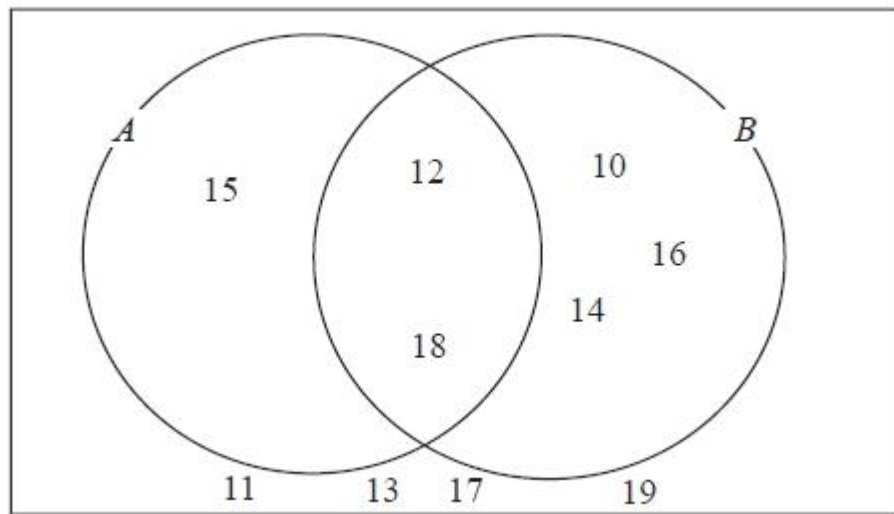| Lowest	1.5 kg
Highest	6.3 kg
Lower quartile	2.7 kg
Interquartile range	1.7 kg
Median	3.2 kg

Draw a box plot for this information.

Weight (kg)

(Total for question = 3 marks)

Q6.

Here is a Venn diagram.

(a) Write down the numbers that are in set

 (i) $A \cup B$

 ....

 (ii) $A \cap B$

 ....

 (2)

One of the numbers in the diagram is chosen at random.

(b) Find the probability that the number is in set A'

 ....

 (2)

(Total for question = 4 marks)
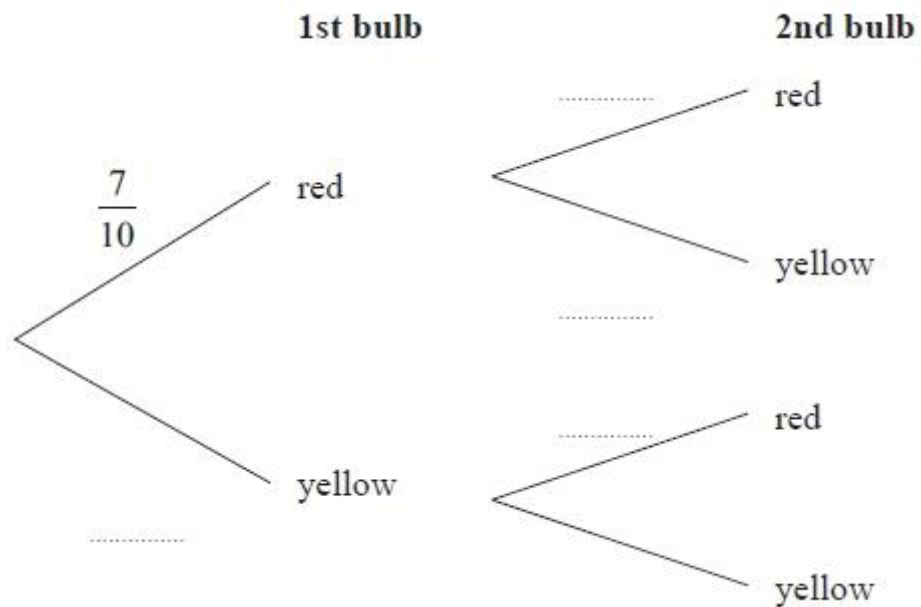
Q7.

Yvonne has 10 tulip bulbs in a bag.

7 of the tulip bulbs will grow into red tulips.
3 of the tulip bulbs will grow into yellow tulips.

Yvonne takes at random two tulip bulbs from the bag.
She plants the bulbs.

(a) Complete the probability tree diagram.

(2)

(b) Work out the probability that at least one of the bulbs will grow into a yellow tulip.

....

(3)

(Total for Question is 5 marks)