Name _____ Teachers Name _____

Show your working.

1 Several friends played a computer game.
The table displays the scores of four of them.

Jason	6164
Sam	8129
Alex	4756
Kate	6390

(a) Write these scores in numerical order, smallest first.

.... [1]

(b) How many more points did Kate score than Alex?

.... Answer (b).................................... [1]

(c) Jenny scored five thousand one hundred and thirty six points.
Write her score in figures.

.... [1]

(d) Matt scored only ¾ as many points as Jason.
Write down the number of points scored by Matt.

.... Answer (d).................................... [1]

(e) Dave scored 60% of Kate's score.
How many points did Dave score?

.... Answer (e).................................... [1]

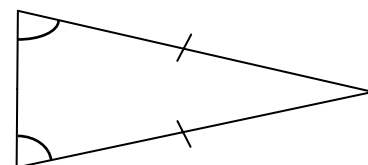**(f)** Dennis scored 7847 points.
Write down the number of points scored by Dennis to the nearest 5.

Answer (f).................................... [1]

2 **(a**) This quadrilateral has two pairs of equal angles, and four equal sides.
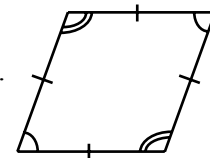
What is the special name given to this quadrilateral?   Answer (a) (i)............................. [1]

This triangle has two equal sides and two equal angles.

What is the special name given to this triangle?   Answer (a) (ii)............................. [1]

(b) Give the names of the three shapes below.
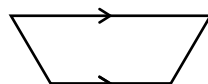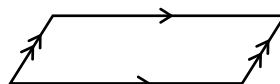
(i)   (ii)   (iii)

Answer (i)...................................... [1]   Answer (ii)..........................[1]   Answer (iii) ....[1]

(c) Reflect the following shape in the dotted line.
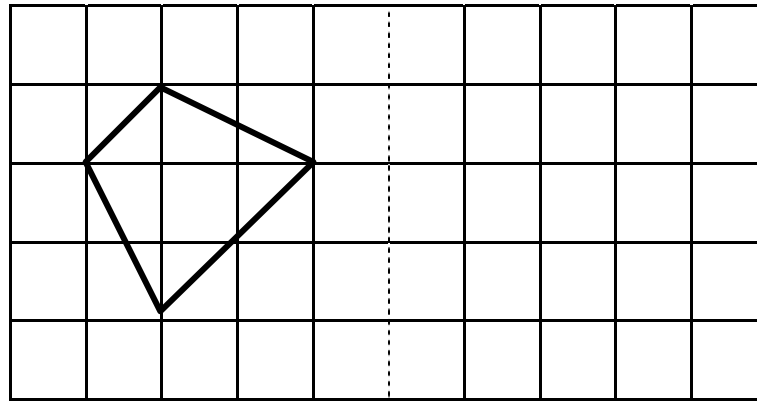
[2]

3 The following table shows the rainfall in millimetres to fall in a garden on each day of a particular week.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
3mm	6mm	0mm	1mm	4mm	5mm	5mm

(a) On which day of the week did the most rain fall?   Answer (a) .... [1]

(b) What was the range of the rainfall for the whole week?   Answer (b) .... mm [1]

(c) What is the modal rainfall this week?   Answer (c) .... mm [1]

The number of rainy days per week is also recorded over several weeks. The results are shown in the following bar chart.
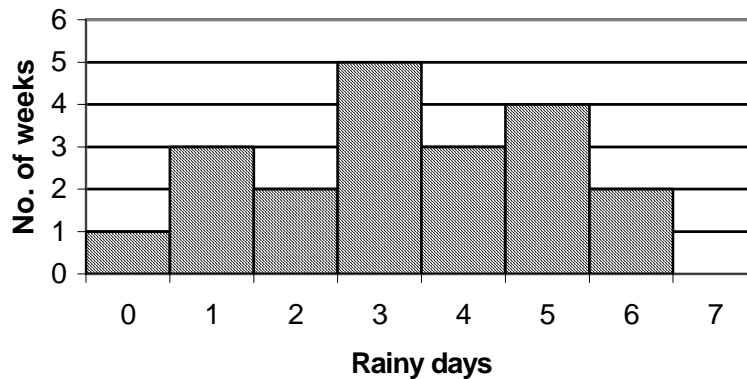
(d) What was the greatest number of rainy days in any week?   Answer (d) .... [1]

(e) Over how many weeks was this data collected?

    ....
    ....Answer (e) .... [2]

During one particular week, three days are rainy. A day is chosen at random during this week.

(f) What is the probability that this day is rainy?   Answer (f) .... [1]

(g) What is the probability that this day is not rainy?   Answer (g) .... [1]

4 241 supporters of a football club travelled to a football match.
The coaches they were in could take up to 45 people each.

(a) How many coaches were needed?

.... Answer (a)................................. [1]

(b) For another football match, two of the original coaches are replaced by larger coaches which can take up to 55 people each. How many coaches are needed this time to carry the 241 supporters?

....

.... Answer (b)................................... [2]

(c) Each supporter pays £8.50 towards travel costs and entry to the football match. The travel costs total £988. Once the travel costs and entry to the match have been paid for, there is £12.15 to spare.
What was the total cost of entry to the match?

....

.... Answer (c) £............................... [2]

5 The following is a sequence of patterns. Each pattern is made up of straight lines.

Pattern 1   Pattern 2   Pattern 3

(a) Draw the next pattern (Pattern 4) in this sequence.   [1]

(b) Pattern 1 contains four straight lines. How many straight lines are added to each pattern to create the

next pattern in the sequence?   Answer (b) .... [1]

(c) How many straight lines will there be in Pattern 6?   Answer (c).................................. [1]

(d) Which pattern in the sequence will contain 25 straight lines?   Answer (d) .... [2]

6 Oranges, apples, and bananas can be bought together in fruit boxes.
Each fruit box contains 5 apples, 8 oranges and 3 bananas.

(a) How many bananas would there be in three fruit boxes?

.... Answer (a)................................. [1]

(b) Joe buys some fruit boxes. His fruit boxes contain a total of 32 oranges. If each fruit box costs £2.50, how much has Joe paid for the fruit boxes?

....

....Answer (b) £ .... [2]

(c) Many boxes can be stored together in a crate. A crate is known to contain a total of 40 apples.
How many boxes are stored in each crate?

....Answer (c) .... [2]

7 **(a)** I leave my house at 12.48 pm to go shopping. I walk to the shops, and arrive at 1.03 pm.
How long does it take me to walk to the shops?

....Answer (a) .... min [1]

(b) I walk at a steady speed of 4km per hour. How far away from my house are the shops?

....

....Answer (b) .... km [2]

(c) On my way back I am carrying my shopping, so I can only walk at 3km per hour. What time must I leave the shops to be back home by 14:15?

....

....Answer (c) .... [3]

8 The cost of a local bus journey depends upon the distance travelled in kilometres.
It is calculated as 12 pence per kilometre, plus 35 pence.

(a) What is the cost of a bus journey of three and a half kilometres?

....Answer (a) .... p [2]

(b) Another journey costs 86 pence. How long is this journey?

....

....Answer (b) .... km [3]

(c) What is the minimum cost for any bus journey?   Answer (c)................................ p [1]

9 A ladder is resting against a wall as shown in the diagram below.

Diagram not drawn accurately

2.5m

The ladder makes an angle of 70° with the ground.
The ladder reaches 2.5m up the wall.

70°
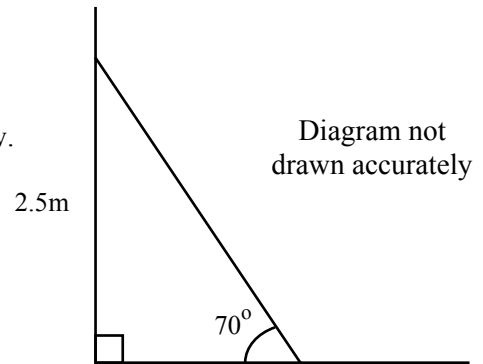
(a) Complete a scale drawing of the ladder below.
The ground and wall have already been drawn. Use a scale of 2cm to 1m.
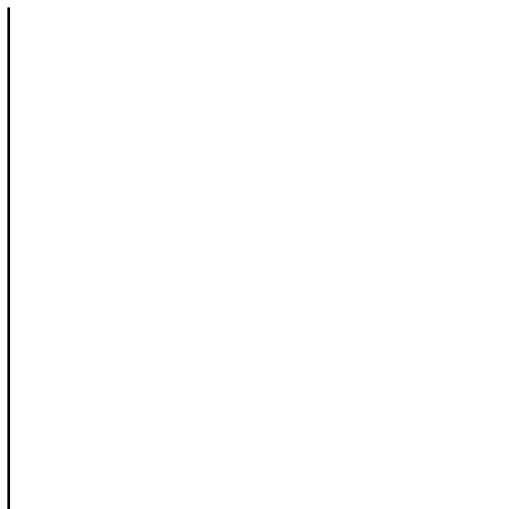
[2]

(b) i) Measure the distance in your diagram of the wall from the foot of the ladder.

Answer (b) .... cm [1]

(b) ii) How far is the actual distance of the wall from the foot of the ladder?

Answer (b) .... m [1]

10 **(a)** A cuboid is constructed from cubes with sides of 1cm. It is five cubes long, four cubes wide and three cubes high, as shown. What is the volume of this cuboid?

....

....Answer (a) .... cm³ [2]

(b) What is the area of the largest face of this cuboid? Give your answer in square centimetres.

....

....Answer (b) .... cm² [2]

11 **(a)**

O is the origin
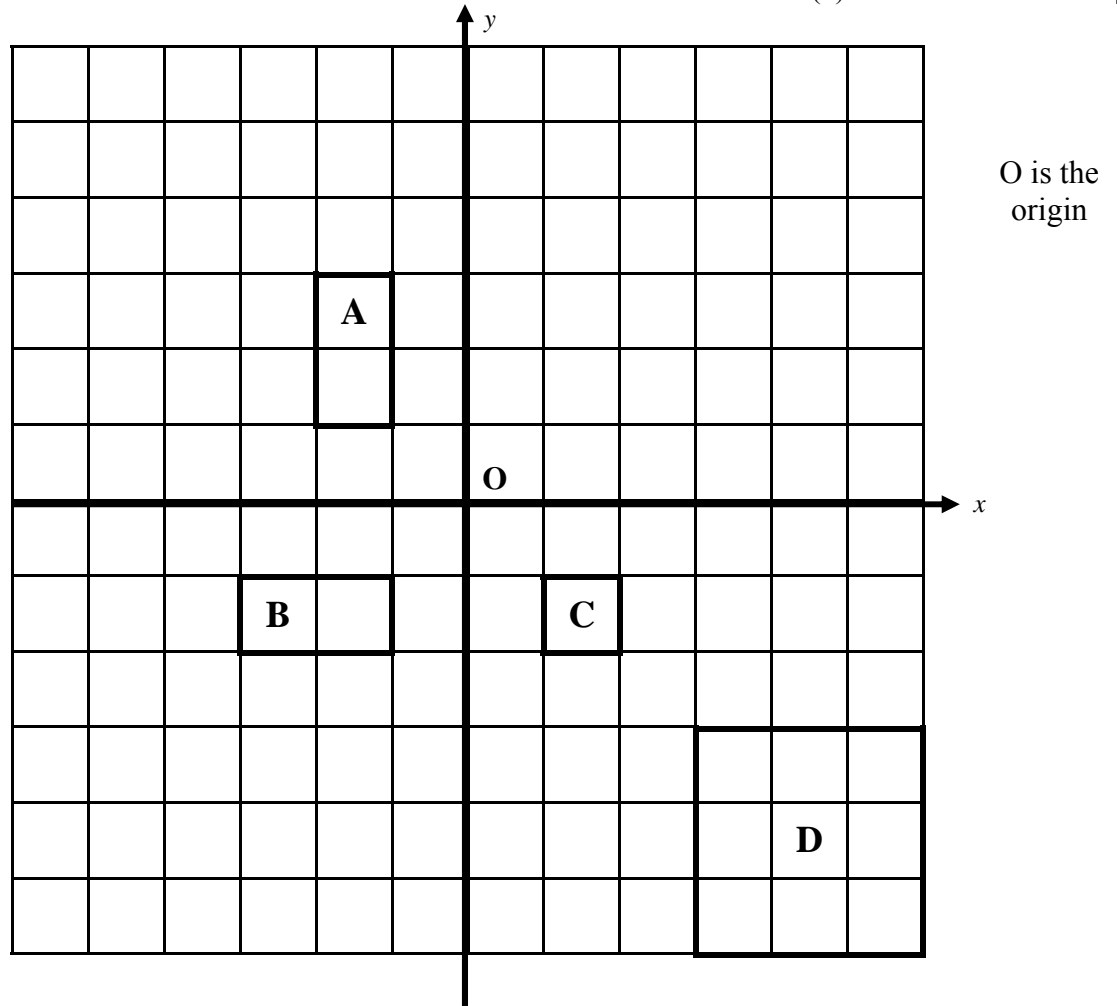
(i) Describe fully the transformation that maps A onto B

....
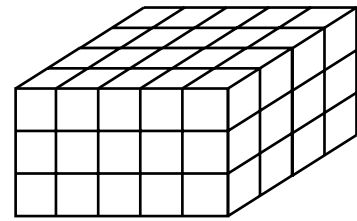
.... [2]

(ii) Describe fully the transformation that maps C onto D

....

.... [2]

(b) Calculate the area of the following shape.

....

....

....

....Answer (b) .... cm² [3]

4.6 cm

2.8cm

3.2 cm
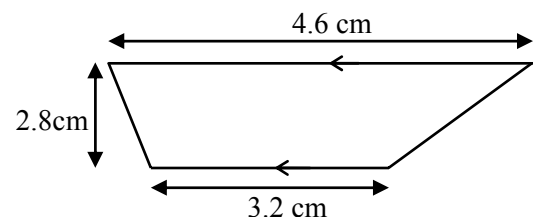
12 A two pint carton of milk costs 65p at the local supermarket.
At the same supermarket, a four pint container of milk costs £1.19.

(a) Which of the two quantities of milk is the better value for money? Explain how you reach your answer.

....

....

.... Answer (a)................................. [3]

At a different supermarket, a one kilogram bag of sugar can be bought for £1.60.
A smaller bag of sugar costs 45p.

(b) Which of the two bags of sugar represents the better buy if the smaller bag of sugar weighs 250g?
Explain your answer.

....

....

....Answer (b) .... [4]

(c) A television set costs £800. In a sale, its price is reduced by 14%.
What is the new price of the television set after the reduction?

....

....

....Answer (c) £............................... [3]

13 **(a)** Paperback books cost £4.50 each, and hardback books cost £6.50 each.
Write down an expression for the cost, in pence, of x paperback books and y hardback books.

....Answer (a) .... [2]

(b) Solve the equation $6x + 5 = 29$

....

....Answer (b) x = ... [2]

(c) When $y = 3x + 2 - x + 3$,

(i) Simplify the expression for y

....Answer (c)(i) y =........................ [1]

(ii) Find the value of y when $x = 3$

....Answer (c)(ii) y =........................ [1]

(iii) Find the value of x when $y = 17$

....

....Answer (c)(iii) x =....................... [2]

14 Work out the following, writing down the full calculator display–

(a) 2.783^3

....Answer (a) .... [1]

(b) $\dfrac{33.5}{\sqrt{63.2}}$

....Answer (b) .... [1]

(c) $\dfrac{6.7 + 2.9}{4.92 - 1.15}$

....

....Answer (c) .... [2]

(d) $5.5 - 3.2 \times 1.98 + 8.1$

....

....Answer (d) .... [1]

15 A survey was carried out to find out the favourite colours of 120 children.
The results were shown in a pie chart.

(a)   In this pie chart, area representing yellow covered an angle of 63°.
How many of the children asked said that yellow was their favourite colour?

....

....Answer (a) .... [2]

(b)   Another 120 children were asked the same question at a different school.
The results are shown in the table below.

Colour	Red	Blue	Yellow	Green	Other
Number of children	38	26	18	22	16

Draw a pie chart to represent these results.

....

....
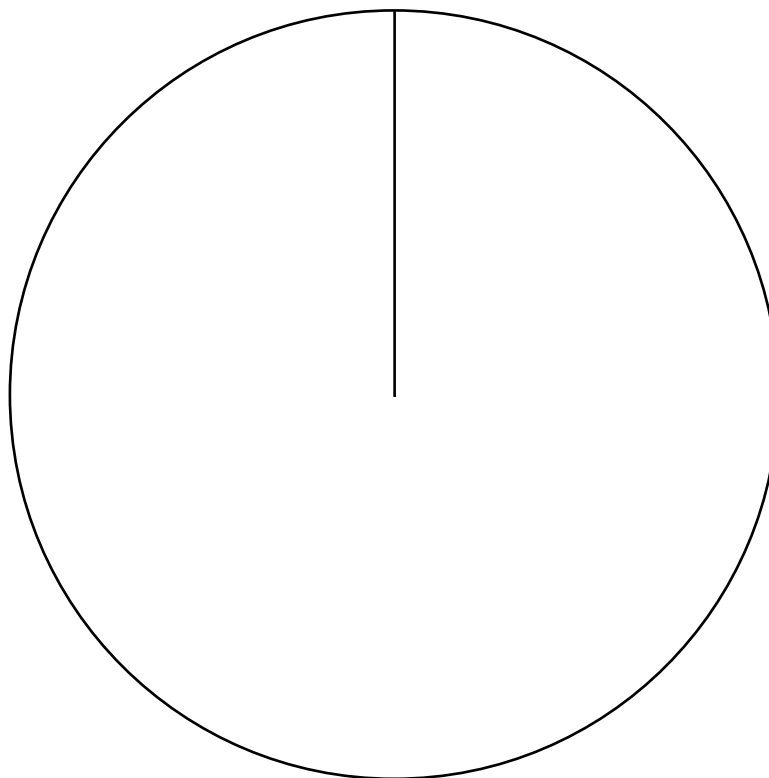
.... [3]

16 The drawing shows a three dimensional solid

All measurements
in cm

5

3

1

1

1

1

Not to scale
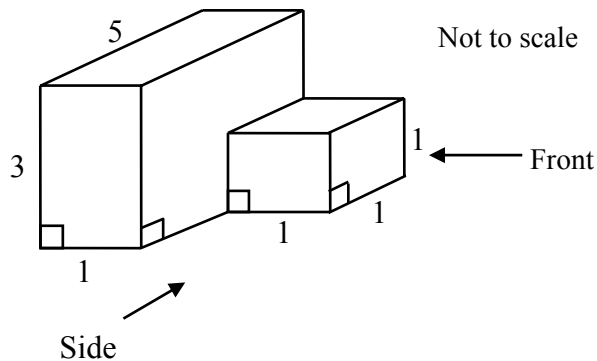
Front

Side

(a) On the grid below, draw front and side elevations of this solid.
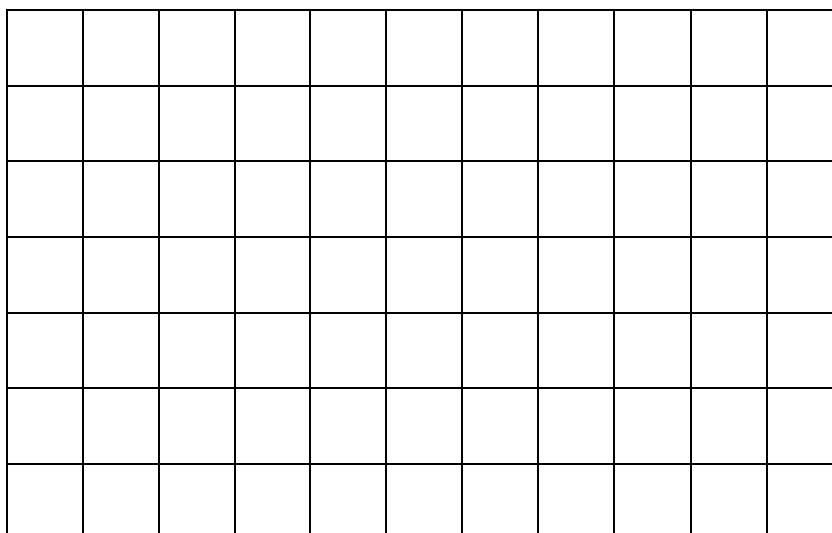
[3]

(b) What is the total volume of the solid drawn above?

....Answer (b) .... cm³ [2]

17 The table shows the heights of all the basketball players taking part in a competition.

Height (h cm)	No. of players
h < 170	12
170 ≤ h < 180	16
180 ≤ h < 190	19
190 ≤ h	13

(a) How many basketball players were taking part in this competition?

....Answer (a) .... [1]

(b) How many basketball players were more than 170cm tall?

....Answer (b) .... [1]

(c) What percentage of all the players were more than 170cm tall?

....Answer (c) .... % [1]

(d) One of the players is chosen at random. Calculate the probability that player is shorter than 170cm.

....Answer (d) .... [1]