

**Monday 9 June 2014 – Morning**

**GCSE MATHEMATICS B**

**J567/01** Paper 1 (Foundation Tier)

Candidates answer on the Question Paper.

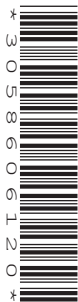
**OCR supplied materials:**

None

**Other materials required:**

- Geometrical instruments
- Tracing paper (optional)

**Duration:** 1 hour 30 minutes



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**INSTRUCTIONS TO CANDIDATES**

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Your answers should be supported with appropriate working. Marks may be given for a correct method even if the answer is incorrect.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the bar codes.

**INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The quality of written communication is assessed in questions marked with an asterisk (\*).
- The total number of marks for this paper is **100**.
- This document consists of **20** pages. Any blank pages are indicated.

**WARNING**



**No calculator can be used for this paper**

## Formulae Sheet: Foundation Tier

**Area of trapezium** =  $\frac{1}{2} (a + b)h$



**Volume of prism** = (area of cross-section)  $\times$  length



**PLEASE DO NOT WRITE ON THIS PAGE**

Answer **all** the questions.

1 Choose a value from each list to complete the following sentences.

(a) 190 cm      1900 g      190 g      19 kg

The weight of an apple is about ..... [1]

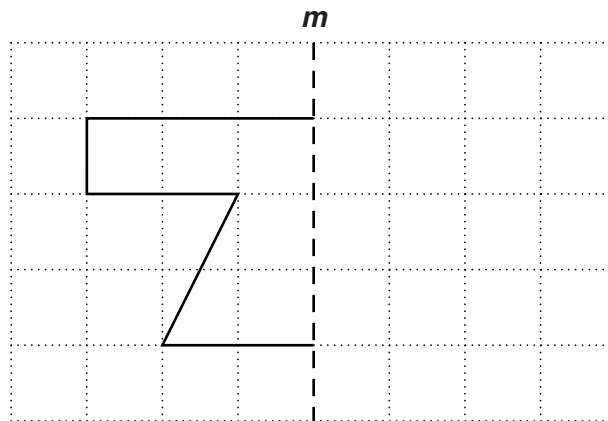
(b) 4.5 km      450 cm      45 m      45 ml

The length of a car is about ..... [1]

(c) 50 ml      50 cm      5 litres      5 ml

A teaspoon holds about ..... [1]

2 Reflect the shape in the line *m*.



[2]

3 Ellie (E) is going to a football match with three friends, Alec (A), Karen (K) and Bev (B).

- (a) They sit next to each other in a row of four seats.  
Ellie has to sit in seat 1 or seat 4.

Complete the table to show all twelve possible orders in which they could sit.  
One has been done for you.

Seat 1	Seat 2	Seat 3	Seat 4
E	A	K	B

[2]

- (b) There were 78614 people at the match.

Write this number correct to

- (i) the nearest ten,

(b)(i) ..... [1]

- (ii) two significant figures.

(ii) ..... [1]

4 (a) Work out.

(i)  $627 + 304$

(a)(i) ..... [1]

(ii)  $47 \times 100$

(ii) ..... [1]

(iii)  $9.6 \div 4$

(iii) ..... [2]

(iv) 35% of 80

(iv) ..... [2]

(b) Write down

(i) 75% as a fraction,

(b)(i) ..... [1]

(ii)  $\frac{3}{5}$  as a decimal.

(ii) ..... [2]

5 (a) Here are the first four terms of a sequence.

5    11    17    23

(i) Write down the next term of the sequence.

(a)(i) ..... [1]

(ii) Explain how you worked out your answer.

..... [1]

(b) Here is the rule to find the next term of another sequence.

multiply the previous term by 4 then subtract 3

The first term of the sequence is 10.

Find the second term.

(b) ..... [2]

6 Write these numbers in order of size, smallest first.

4.02    4.2    4.042    4.024    4.202

..... [2]  
*smallest*

7 Jamilla records the favourite sweet of 40 children.

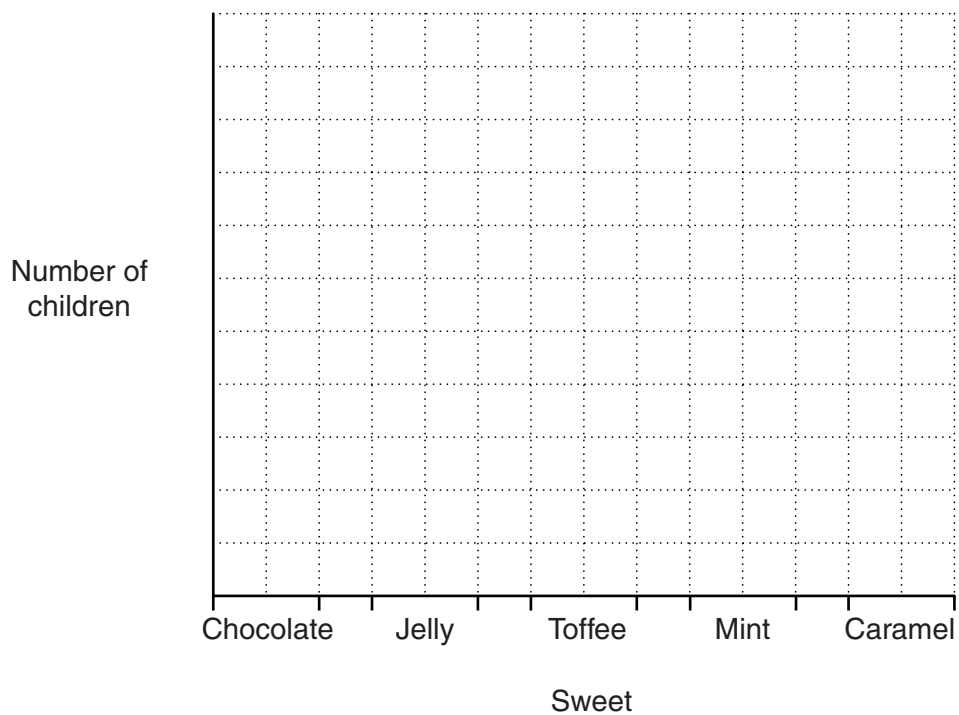
Sweet	Number of children
Chocolate	7
Jelly	13
Toffee	
Mint	2
Caramel	12

(a) Complete her table. [1]

(b) Which sweet is the mode?

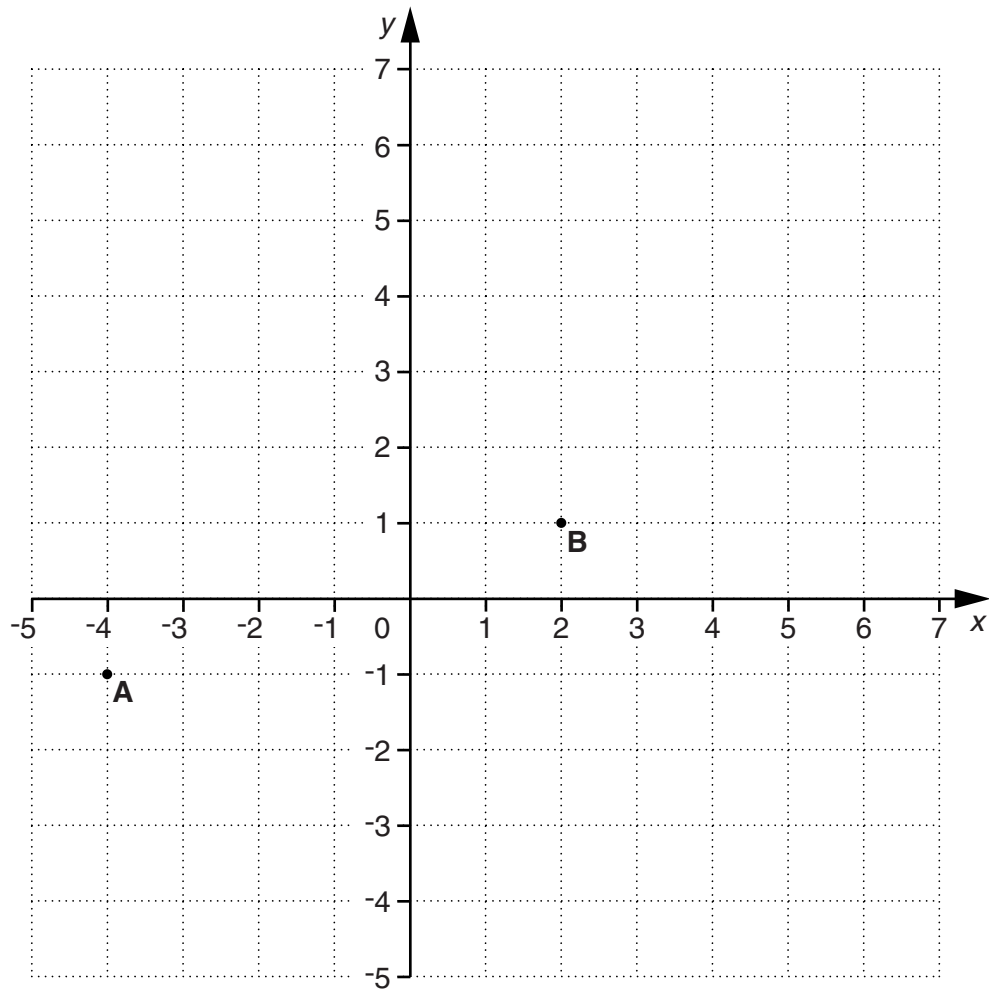
(b) ..... [1]

(c) Draw a bar chart to represent this data.



[3]

8 (a) This is a coordinate grid.



(i) Write down the coordinates of point **A**.

(a)(i) (....., .....) [1]

(ii) Plot point **C** at (-4, 3).

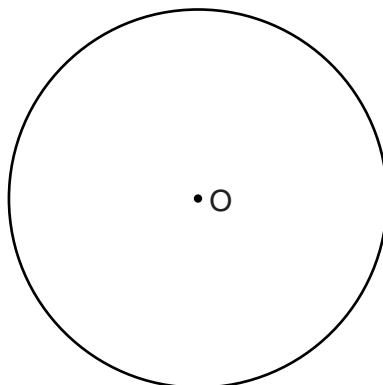
[1]

(iii) What type of triangle is **ABC**?

(iii) ..... [1]

(b) On this circle, centre **O**, draw a radius.

[1]





9 (a) Simplify the following expressions.

(i)  $a + 4a - 2a$

(a)(i) ..... [1]

(ii)  $3c - 5d + 2c - 2d$

(ii) ..... [2]

(iii)  $b^5 \times b^3$

(iii) ..... [1]

(b) Solve.

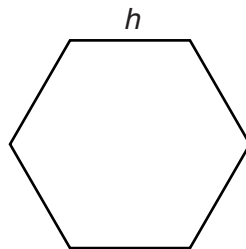
(i)  $3x = 36$

(b)(i)  $x =$  ..... [1]

(ii)  $13 = 4 + 6x$

(ii)  $x =$  ..... [2]

(c) This is a regular hexagon, with side length  $h$ .



Write down a formula for the perimeter,  $P$ , of this shape.

(c) ..... [2]

10 Mr and Mrs Brown are visiting the zoo with their 4 children, all aged under 16. The children's 2 grandparents, aged 62, go with them.

(a)\* The prices of tickets for the zoo are shown below.

Ticket Prices	
Adult	£16.50
Child (under 16)	£12.50
Over 60s	£13

Group Ticket (2 adults and 2 children)
£53

Work out the cheapest price for these 8 people to enter the zoo.  
You must show all your working clearly.

The cheapest way .....  
..... which costs £ ..... [5]

(b) The zoo has 8 elephants.  
The ages of the elephants are

18    2    7    44    57    36    23    31

(i) Work out the range of the elephants' ages.

(b)(i) ..... [1]

(ii) Work out the median age of the elephants.

(ii) ..... [2]

(c) One of the elephants is six metres and four centimetres long.

Write down this length in metres.

(c) ..... m [1]

(d) The lemurs have a rectangular enclosure 11 metres long and 7 metres wide.

Work out

(i) the perimeter of the enclosure,

(d)(i) ..... m [2]

(ii) the area of the enclosure.  
Give the units of your answer.

(ii) ..... [3]

(e) The zoo is open from 10 am to 6 pm.

How many hours is the zoo open?

(e) ..... [1]

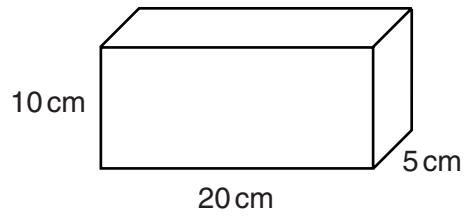
(f) The family arrived at the zoo at 10 20 and stayed for  $6\frac{1}{4}$  hours.

At what time did they leave the zoo?

(f) ..... [1]

12

11 The diagram shows a box in the shape of a cuboid.



Nikki has some of these boxes.

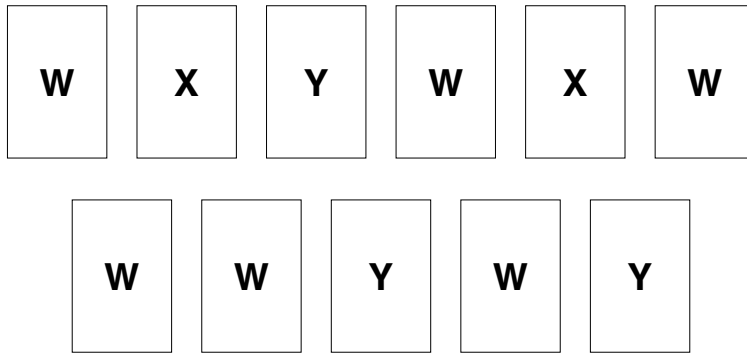
Nikki packs her boxes into a crate in the shape of a cuboid.

The crate has length 2 m, height 50 cm and width 40 cm.

Work out how many of her boxes Nikki can pack into the crate.

..... [4]

12 Emilea has some cards with letters on them.



Emilea takes a card without looking.

(a) What is the probability the card has a W on it?

(a) ..... [1]

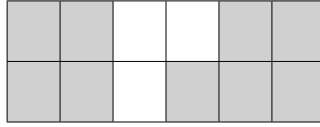
(b) What is the probability the card has either an X or a Y on it?

(b) ..... [1]

(c) What is the probability the card has a Z on it?

(c) ..... [1]

- 13 (a) What fraction of this shape is shaded?  
Give your answer in its simplest form.



(a) ..... [2]

- (b) Work out.

$$\frac{3}{8} + \frac{1}{2}$$

(b) ..... [2]

- (c) Write  $\frac{23}{6}$  as a mixed number.

(c) ..... [1]

- (d) Write  $1\frac{5}{8}$  as an improper fraction.

(d) ..... [1]

- (e) Work out.

$$5\frac{3}{5} - 2\frac{1}{6}$$

(e) ..... [3]

14 Students at a sports college choose activities for games.

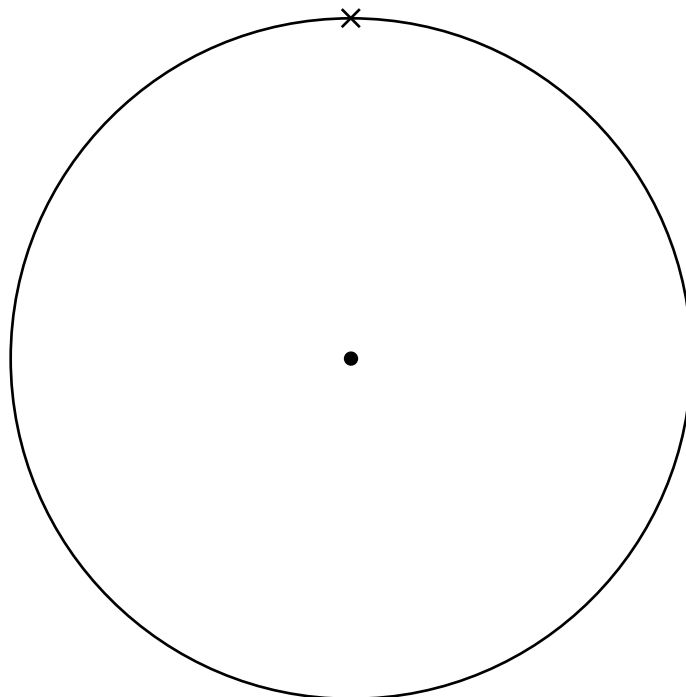
In Year 7 they chose between rounders and athletics in the ratio 1 : 4.  
There are 60 students in Year 7.

Work out how many chose athletics.

..... [2]

15 On the circle below, draw accurately a regular octagon.  
The vertices of the octagon must be on the circumference of the circle.

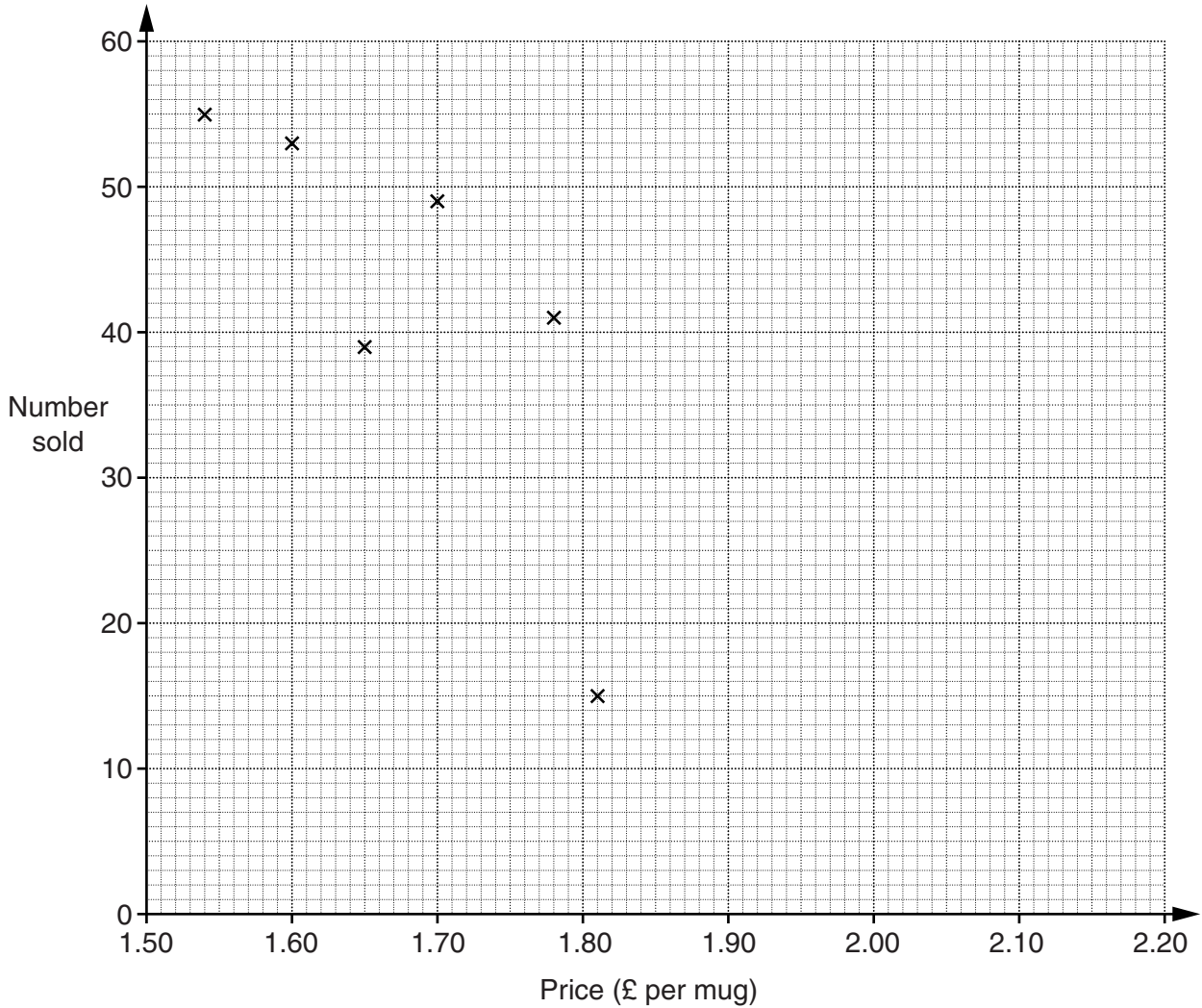
One vertex has been marked for you.



[2]

- 16 Chico sells coffee in his café.  
 He changes the price of a mug of coffee every day.  
 The table shows the number of mugs of coffee he sells and the price on each of ten days.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Price (£ per mug)	1.54	1.60	1.65	1.70	1.78	1.81	1.88	2.05	2.14	2.20
Number sold	55	53	39	49	41	15	40	25	28	21



- (a) The first six points have been plotted on the scatter diagram.  
 Complete the scatter diagram by plotting the last four points. [2]
- (b) Describe the correlation shown.  
 (b) ..... [1]
- (c) Draw a line of best fit on the diagram. [1]



(d) The café closed early one day.

Put a ring around the cross that shows this day.

[1]

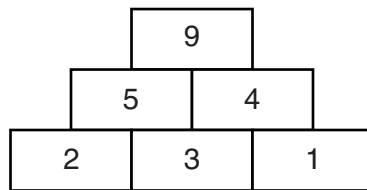
(e) One day Chico charges £2.00 per mug of coffee.

Use the diagram to estimate how much money **in total** Chico takes this day on coffee.

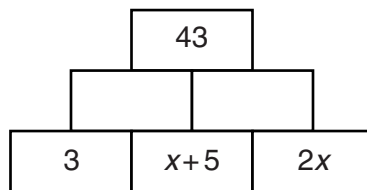
(e) £ ..... [2]

17 Here is a number pyramid.

The value in each cell is found by adding the values in the two cells beneath it.



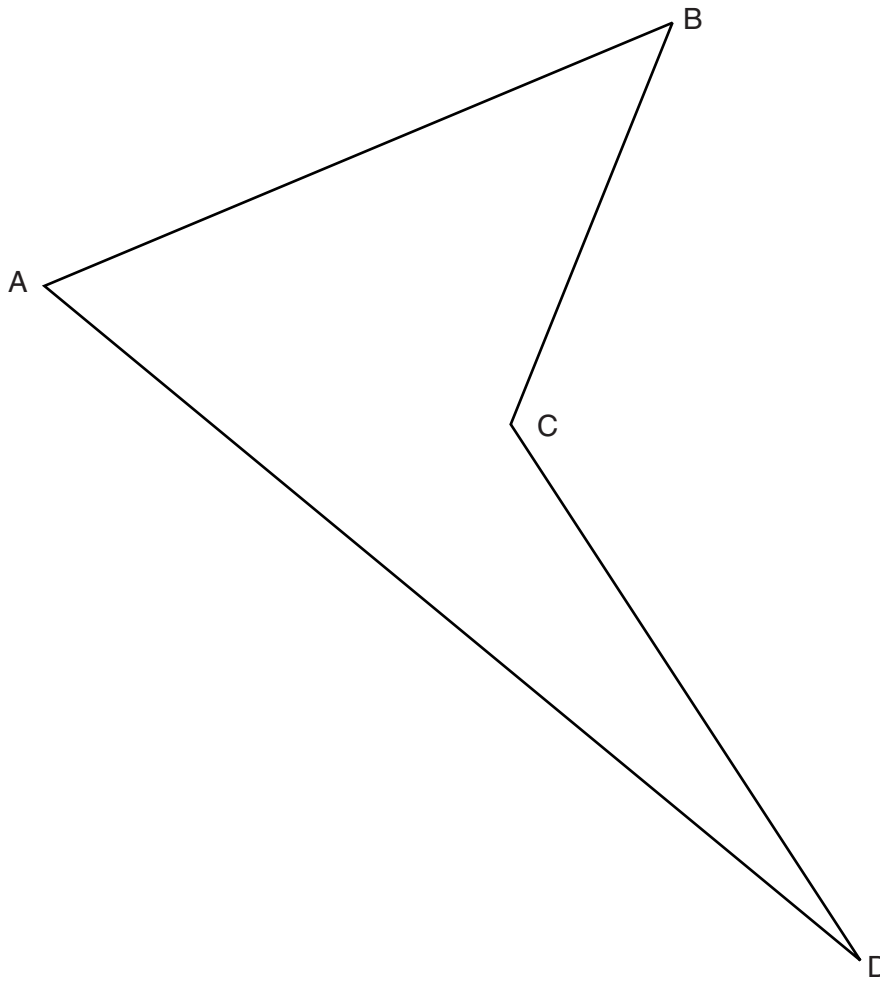
In the number pyramid below, find the value of  $x$ .  
Show all your working.



$x =$  ..... [4]

Turn over

18 The diagram shows a park ABCD.



**Scale: 1 cm represents 100 m**

The council want to put a shed inside the park and it must be

- nearer to AB than AD
- less than 400 m from C.

Shade the region where they can put the shed.  
You must show all your construction arcs.

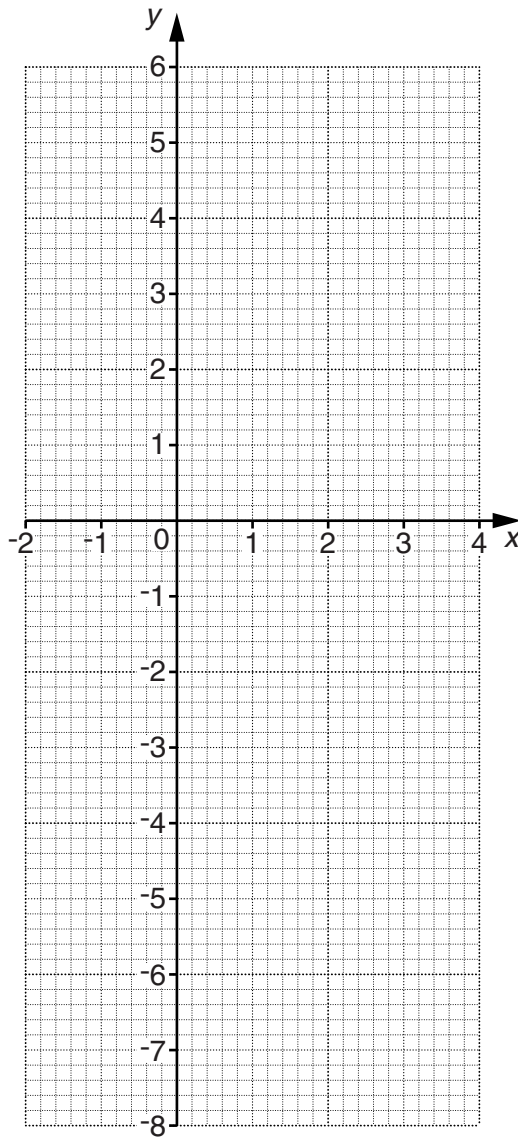
[4]

19 (a) Complete this table for  $y = 2x - 3$ .

$x$	-2	-1	0	1	2	3	4
$y$	-7	-5		-1			5

[1]

(b) Draw the graph of  $y = 2x - 3$  for values of  $x$  from -2 to 4.



[2]

**TURN OVER FOR QUESTION 20**

20 Winnie drives 184 miles.  
She drives 60 miles on ordinary roads and the rest on a motorway.

She completes the journey in  $3\frac{1}{2}$  hours.  
She drives at an average speed of 40 mph on ordinary roads.

Work out her average speed on the motorway.

..... mph [4]

**END OF QUESTION PAPER**



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