OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE

J567/01

MATHEMATICS B

Paper 1 (Foundation Tier)

MONDAY 9 JUNE 2014: Morning
DURATION: 1 hour 30 minutes
plus your additional time allowance

MODIFIED ENLARGED

Candidate forename		Candidate surname	

Centre number					Candidate number				

Candidates answer on the Question Paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Geometrical instruments
Tracing paper (optional)

<table>
<tr><td>WARNING
NO CALCULATOR CAN BE USED FOR THIS PAPER</td></tr>
</table>

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.

Use black ink. HB pencil may be used for graphs and diagrams only.

Answer <u>ALL</u> 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).

INFORMATION FOR CANDIDATES

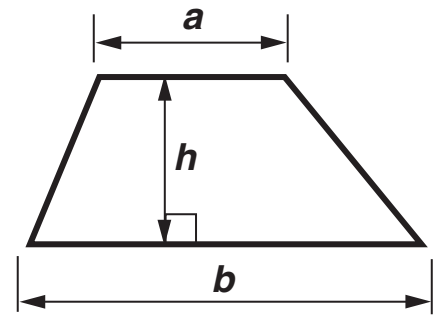The number of marks is given in brackets [ ] at the end of each question or part question.

The quality of written communication is assessed in questions marked with an asterisk (*).
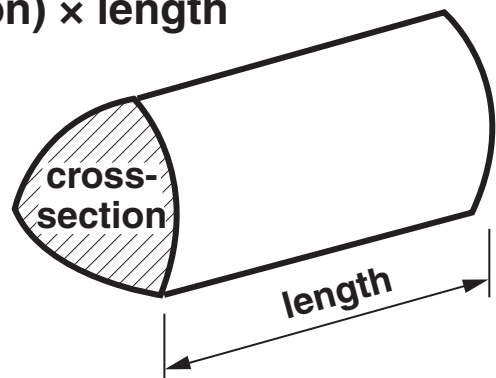
The total number of marks for this paper is <u>100</u>.

Any blank pages are indicated.

FORMULAE SHEET: FOUNDATION TIER

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

Volume of prism = (area of cross-section) × length

Answer ALL the questions.

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

(a) 190 cm   1900 g   190 g   19 kg

The weight of an apple is about _____ [1]
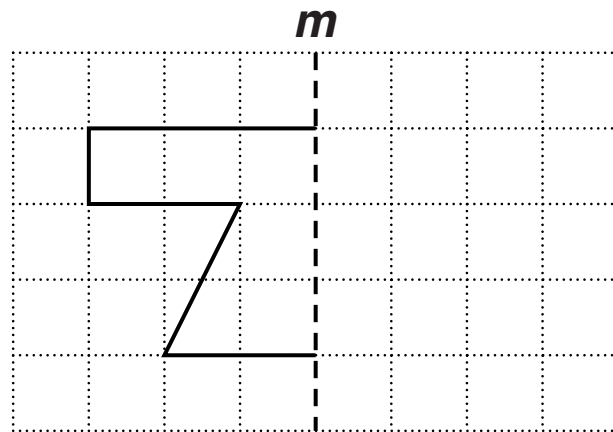
(b) 4.5 km   450 cm   45 m   45 ml

The length of a car is about _____ [1]

(c) 50 ml   50 cm   5 litres   5 ml

A teaspoon holds about _____ [1]

2 **The diagram below shows line *m* and a shape on a grid.**
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 below 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 78 614 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 × 100**

                                          (ii) _____ **[1]**

 (iii) **9.6 ÷ 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 five 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 above by filling in the missing number. [1]
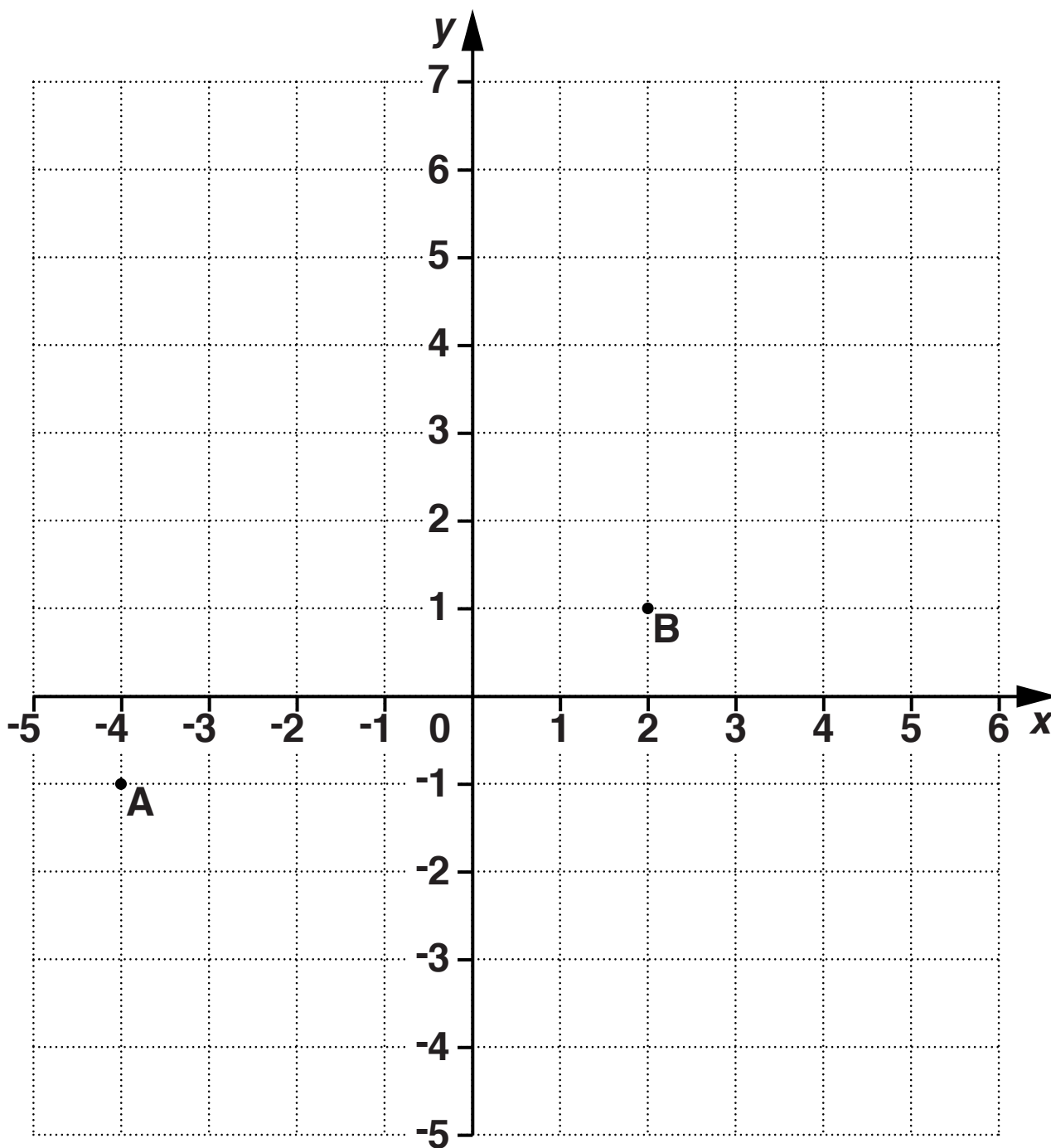
(b) Which sweet is the mode?

(b) _____ [1]

(c) On the grid below draw a bar chart to represent this data.

Number of children

Chocolate   Jelly   Toffee   Mint   Caramel

Sweet
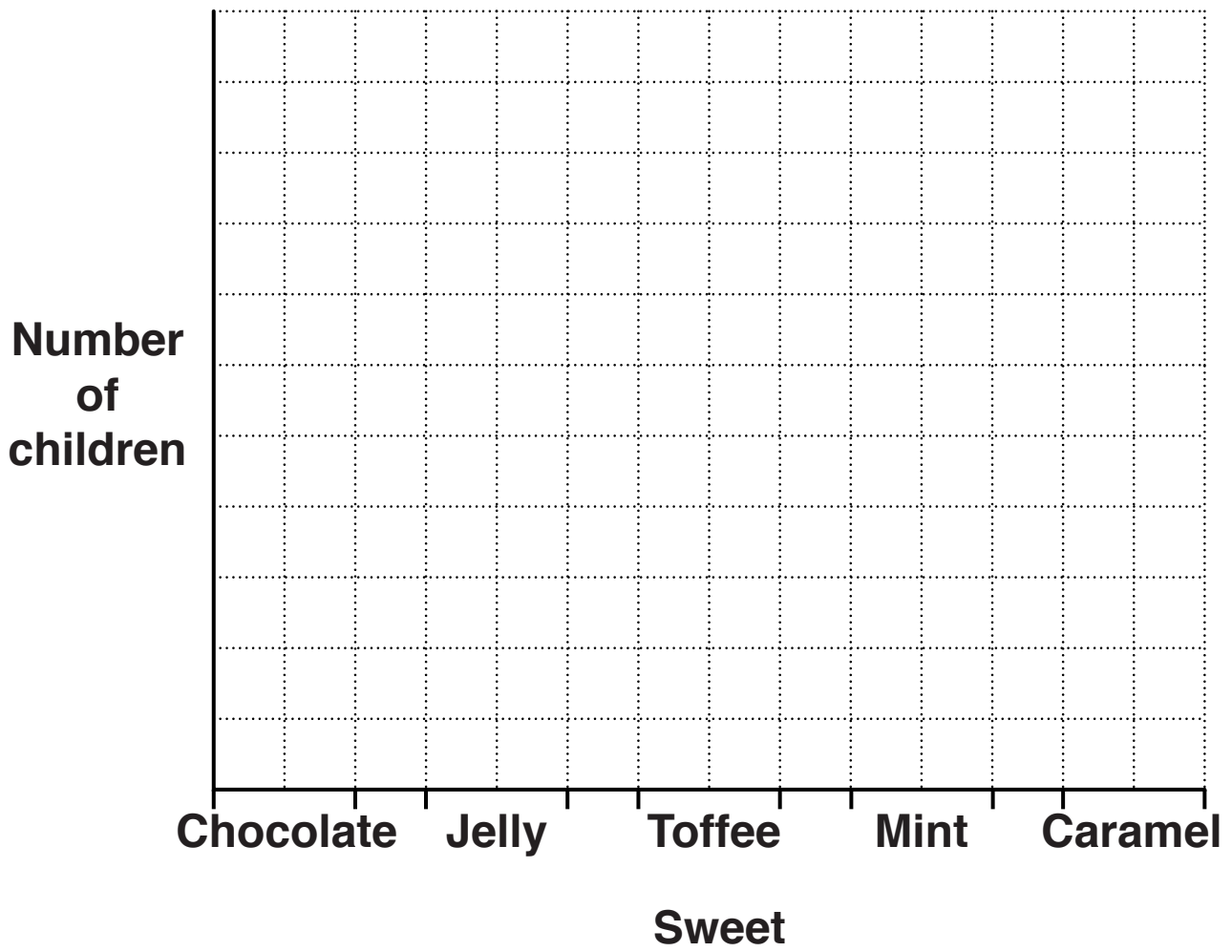
[3]

8 (a) The diagram below is a coordinate grid showing the position of points A and B.

(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) The diagram below shows a circle, centre O.
On this circle draw a radius. [1]
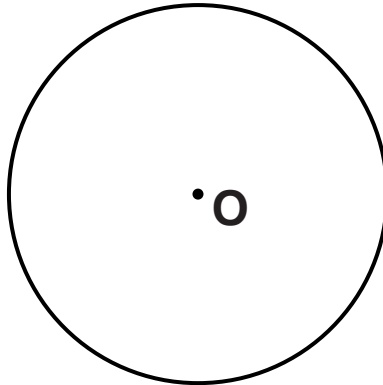
9 **(a) Simplify the following expressions.**

(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) **The diagram below shows a regular hexagon, with side length *h*.**

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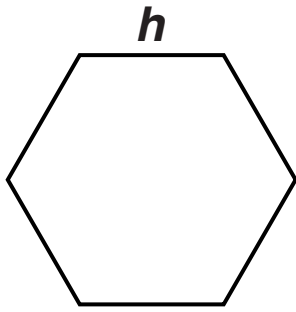
Write down a formula for the perimeter, *P*, of this shape.

(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]

20

(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]

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

10 cm

5 cm

20 cm
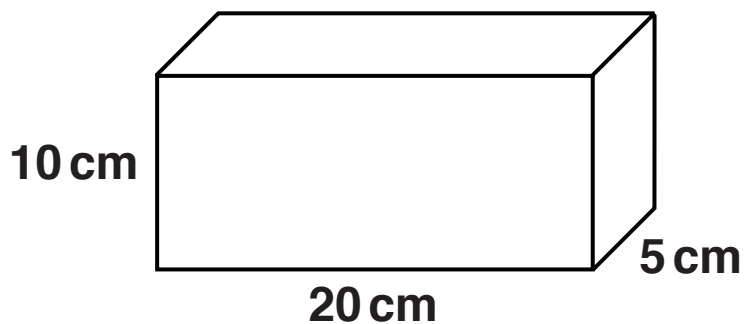
Nikki has some of these boxes.
Nikki packs her boxes into a crate in the shape of a cuboid.
The crate has length 2 m, height 50 cm and width 40 cm.

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

_____ **[4]**

12 **Emilea has some cards with letters on them.**
The cards are shown below.

| W | X | Y | W | X | W |

| W | W | Y | W | Y |
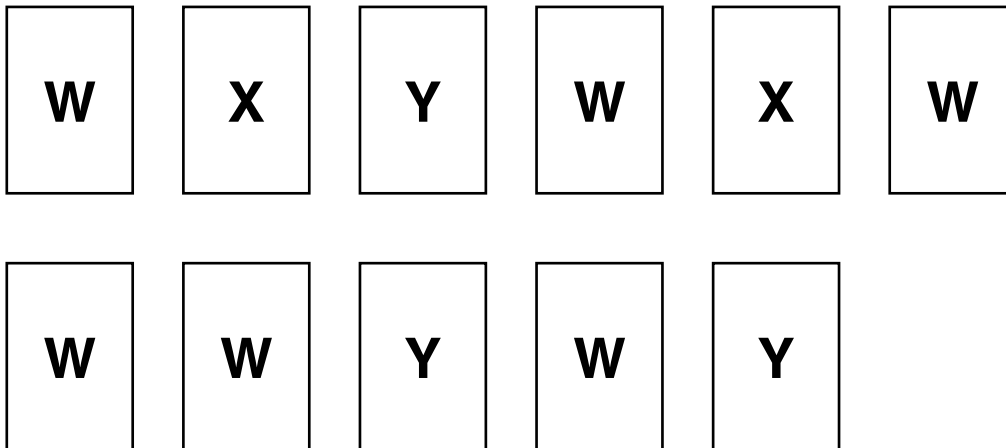
Emilea takes a card without looking.

(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)** The diagram below shows a shape.
What fraction of this shape is shaded?
Give your answer in its simplest form.
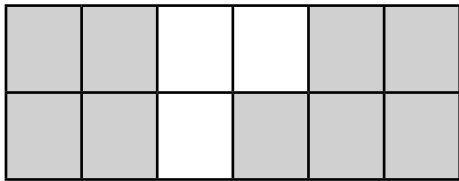
(a) _____ [2]

(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.
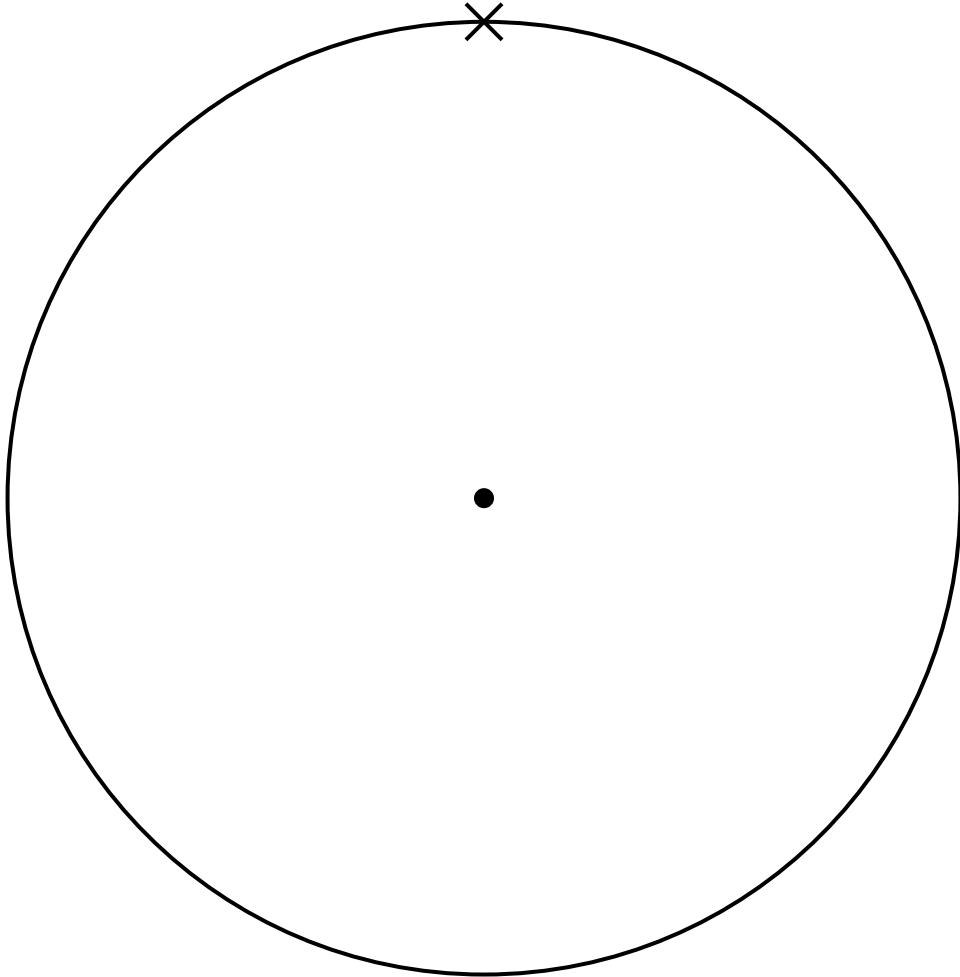
[2]

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

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

Number sold
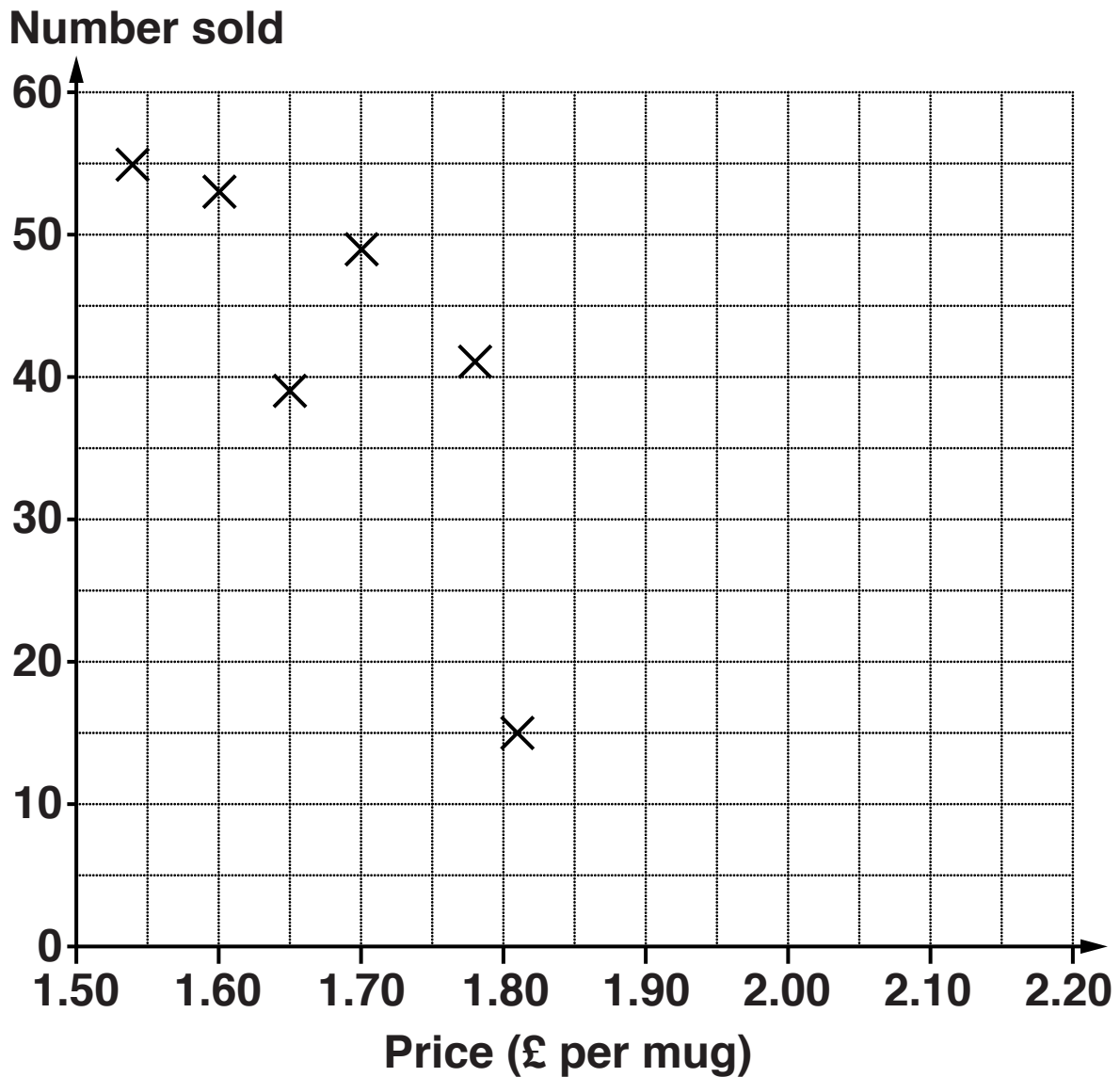
(a) The first six points have been plotted on the scatter diagram above.

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 **The diagram below shows a number pyramid.**
The value in each cell is found by adding the values in
the two cells beneath it.

```
        9
    5       4
  2     3       1
```
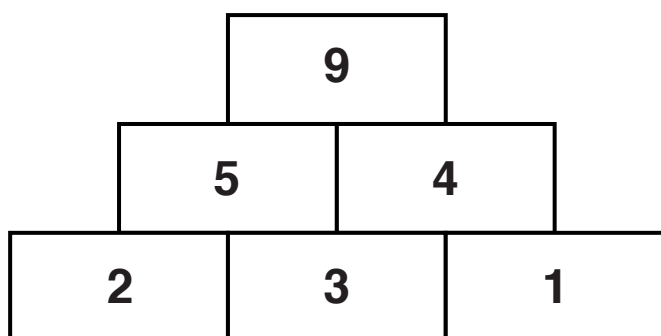
In the number pyramid below, find the value of *x*.
Show all your working.

```
        43
    □       □
  3     x+5     2x
```
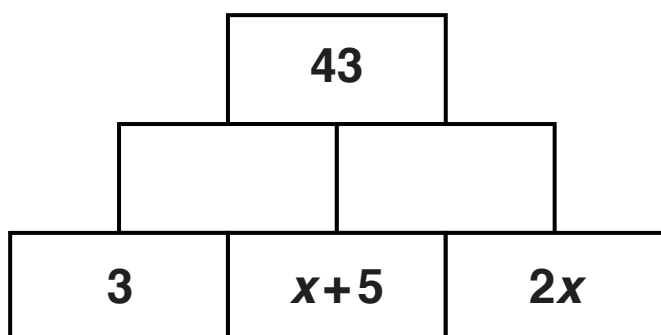
x = _____ [4]

18 **The scale diagram below shows a park ABCD.**
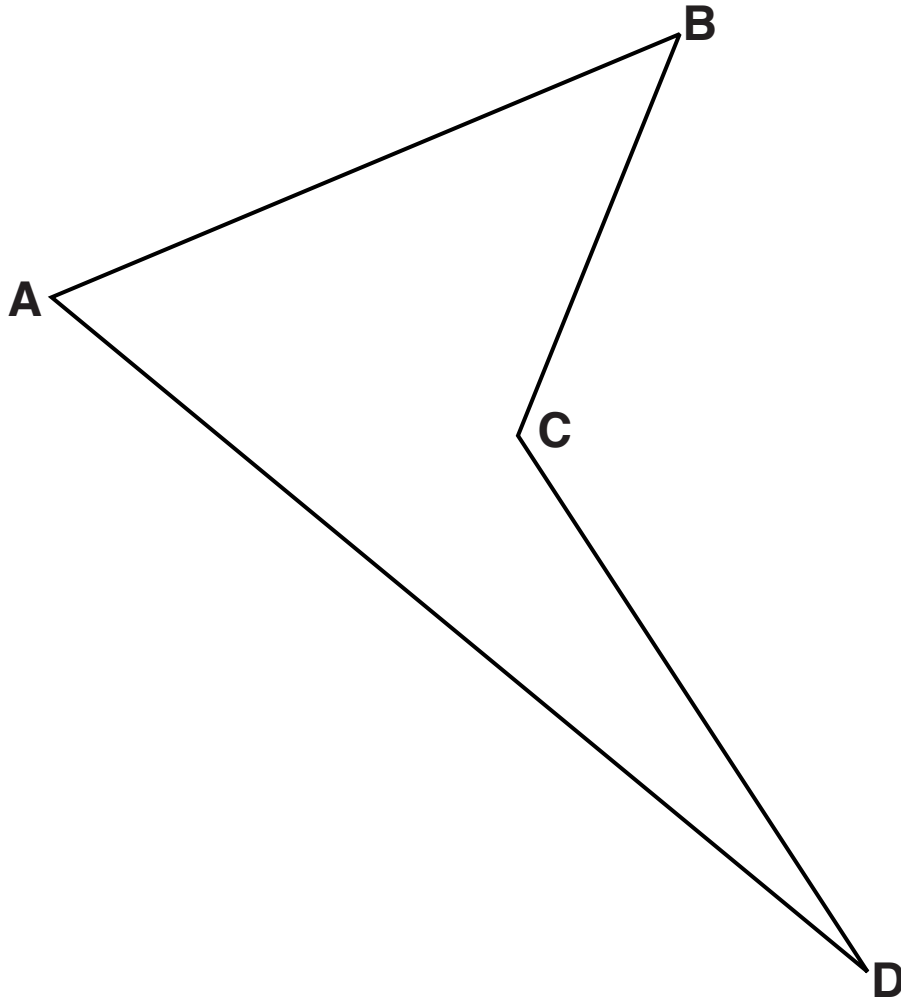
Scale: 1 cm represents 100 m

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 the table below for $y = 2x - 3$ by filling in the three missing numbers.

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

[1]

(b) On the grid below draw the graph of $y = 2x - 3$ for values of x from -2 to 4.
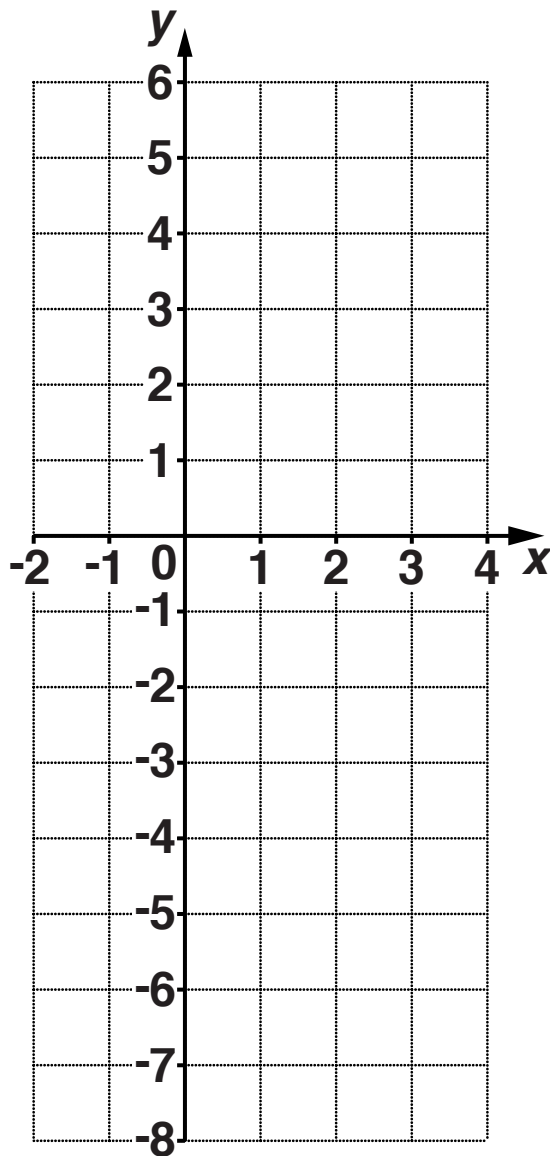
[2]

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]

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