OCR
Oxford Cambridge and RSA

Mock Test Papers-Paper1 -Test1

Paper 1 (Foundation Tier)

Time allowed: 1 hour 30 minutes

F

You must have:
- the Formulae Sheet for Foundation Tier (inside this document)

You can use:
- a scientific or graphical calculator
- geometrical instruments
- tracing paper

Please write clearly in black inkDo not write in the barcodes.

Centre number | | | | | | Candidate number | | | | |

First name(s) _____

Last name _____

INSTRUCTIONS
- Use black ink. You can use an HB pencil, but only for graphs and diagrams. •

Write your answer to each question in the space provided. If you need extra space, use the lined pages at the end of this booklet. The question numbers must be clearly shown.
- Answer all the questions. •

Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Use the r button on your calculator or take r to be 3.142 unless the question says something different.

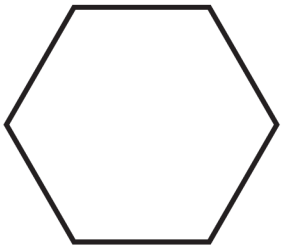
INFORMATION
- The total mark for this paper is 100. •

The marks for each question are shown in brackets • [ ].

ADVICE • Read each question carefully before you start your answer.

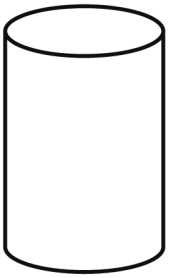
Answer all the questions.

1 (a) Write down the mathematical name of this polygon.



(a) ..... [1]

(b) How many edges does a cylinder have?



(b) ..... [1]

2 Here is a list of numbers.

5, 7, 4, 10, 7, 6, 8

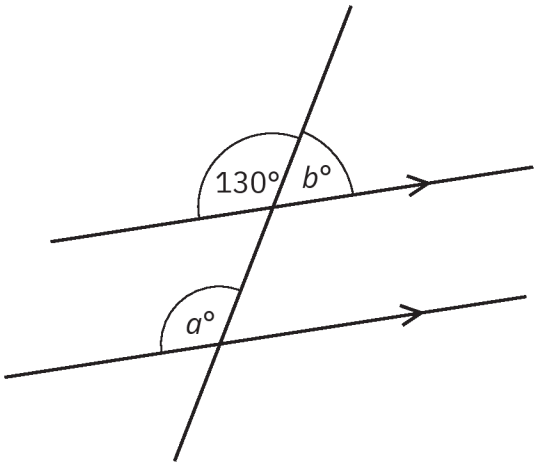
(a) Write down the mode.

(a) ..... [1]

(b) Work out the range.

(b) ..... [2]

3 The diagram shows a pair of parallel lines.



Not to scale

(a) Write down the value of a.

(a) a = ... [1]

(b) Write down the value of b.

(b) b = ... [1]

4 Ella has some empty crates.
Each crate can hold 45 apples.
Ella has 320 apples.

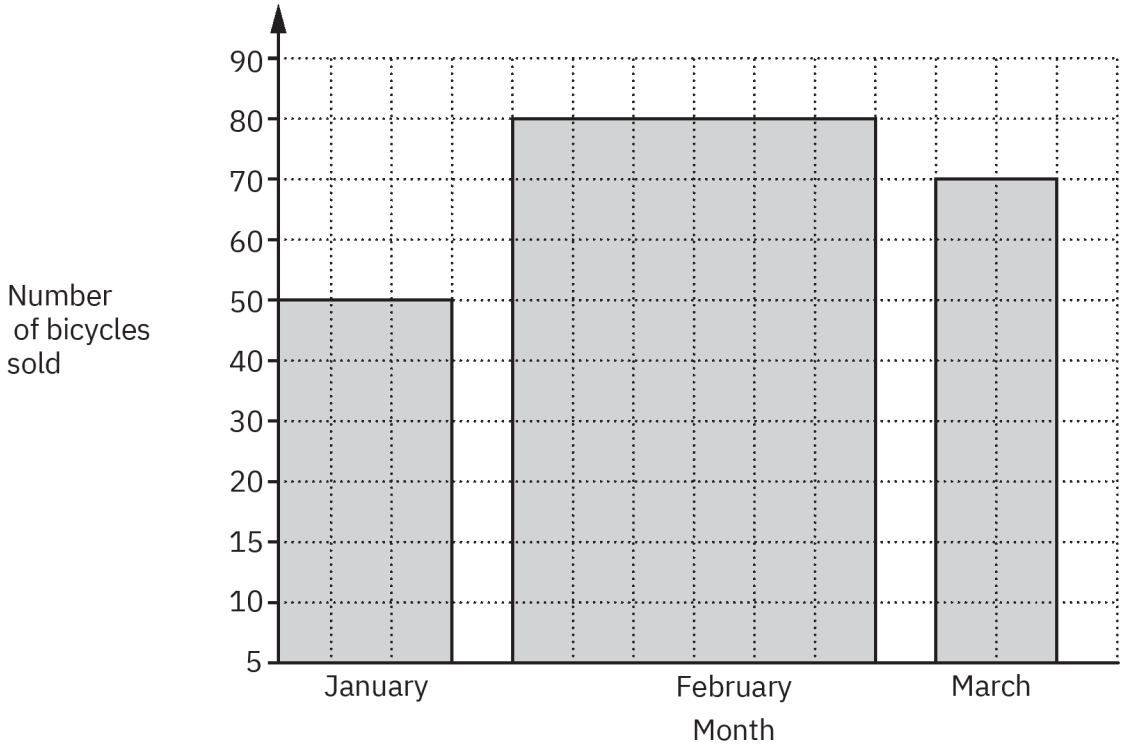
Ella says that seven crates are needed to hold all of the apples.

Is Ella correct?
You must show your working.

..... because .....

.....[2]

5 This graph shows the number of bicycles sold by a store in January, February, and March.



Give two reasons why the graph is misleading.

1 .....

.....

2 .....

.....[2]

6 Liam has these three number tiles.

(a) Which one of Liam's tiles shows a square number?
Write the number on the blank tile on the answer line.

(a) ..... [1]

(b) Write down a two-digit odd number that can be made using two of Liam's tiles.

(b) .....[1]

(c) Write down the three-digit number closest to 500 that can be made using all three of Liam's tiles.

(c) ..... [1]

7 (a) Simplify.

$x + 9x - 3x$

(a) ..... [1]

(b) Factorise.

$x^2 + 8x$

(b) ..... [1]

8 Write the following in order of size, smallest first.

63.7% $\frac{625}{1000}$ $\frac{3}{19}$ 0.7650

..... , ... , ... , ... [2]

smallest

9 A design is made out of red tiles and green tiles.

$\frac{2}{5}$ of the tiles are red.

There are 40 green tiles.
Work out the total number of tiles.

..... [3]

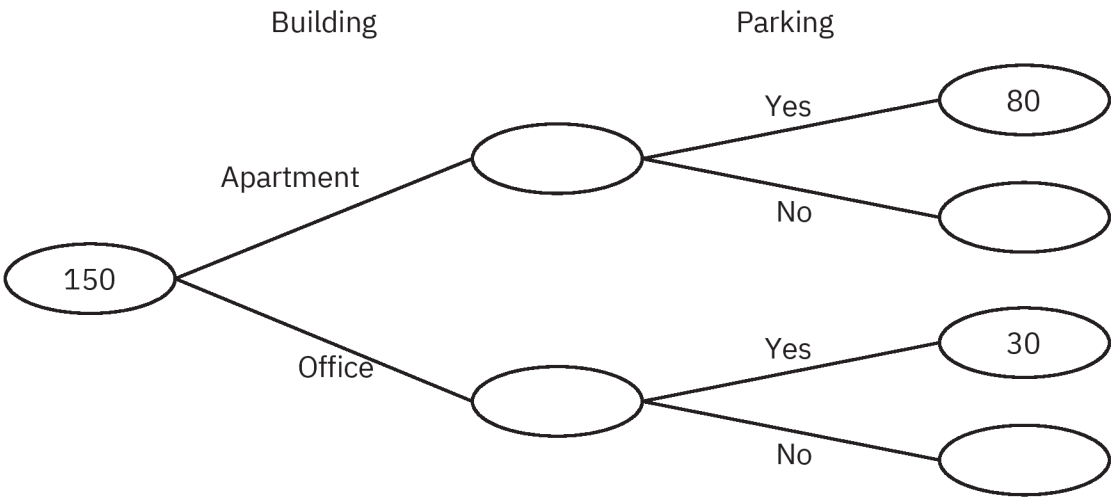
10 Work out, using your calculator.

$\sqrt{25.2^2 + 55^2}$

..... [2]

11 In a town, 150 new buildings are constructed.
Each building is either an apartment or an office.
Each building either has parking or does not have parking.
80 of the apartments have parking, and 30 of the offices have parking.

This frequency tree shows the information:



(a) $\frac{5}{3}$ of the buildings are apartments.

[4]

Complete the frequency tree.

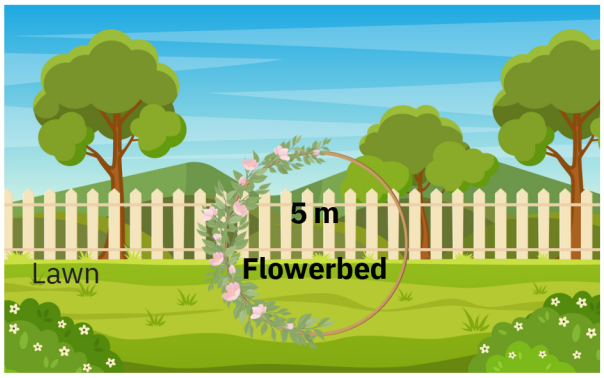
(b) Show that 73.3% of the buildings have parking.

.....

..... [2]

12 The diagram shows Ivy's garden.
The garden is a rectangle, 12 m by 8 m.
She has a circular flower bed with a diameter of 5 m.

12 m



8m

Not to scale

What is the area of her garden that remains as lawn after placing the flowerbed?

..... m2 [4]

13 Here are the ticket prices for an amusement park when bought at the gate:

Adult	£25
Child	£20
Family ticket (2 adults and up to 3 children)	£90

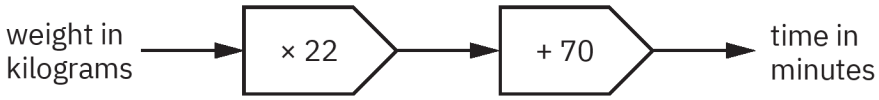
(a) The Smith family takes their three children to the amusement park.
How much do the Smiths save by buying a family ticket?

(a) £ ..... [4]

(b) All ticket prices are reduced by 10% if bought online rather than at the gate.
The Johnsons take their one child to the amusement park and buy their tickets online.
What is the lowest possible total cost of their tickets?

(b) £ ..... [4]

14 Here is a rule to work out the time, in minutes, needed to cook a chicken.



(a) Mia's chicken takes 114 minutes to cook.

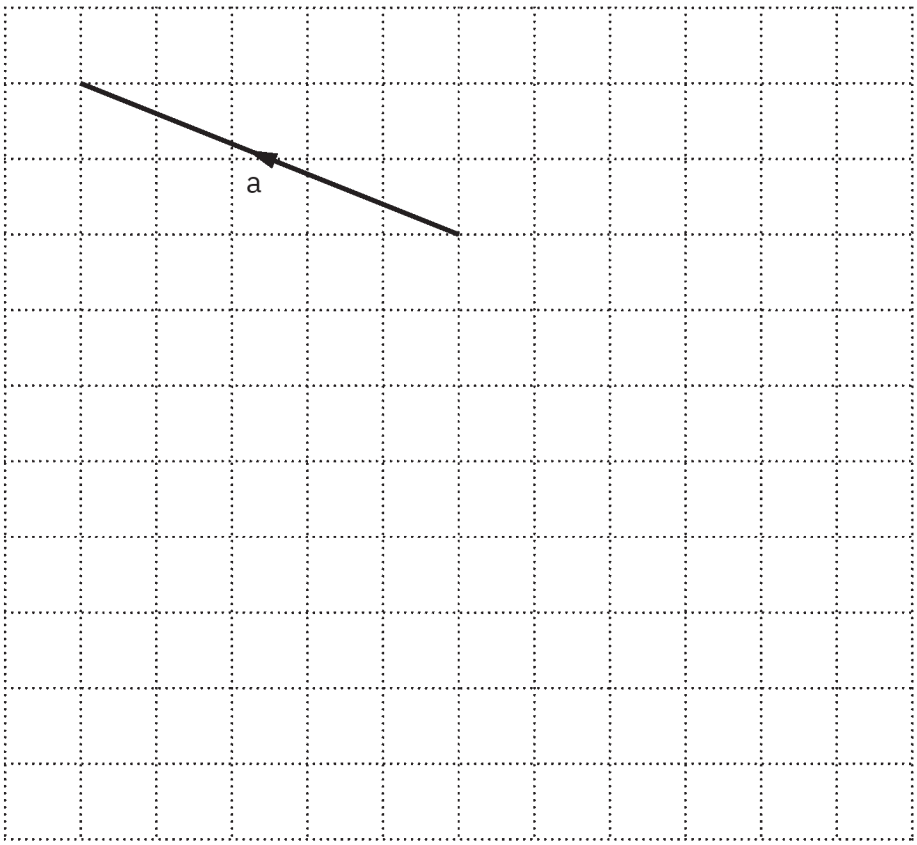
Use the rule to find the weight of Mia's chicken.

(a) ..... kg [2]

(b) Oliver's chicken weighs 3 kg.
He wants it done by 8:00 pm.
Use the rule to determine when Oliver should put his chicken in the oven.
Show your working.

(b) ..... [5]

15 Vector a is drawn on this grid.



(a) Write vector a as a column vector.

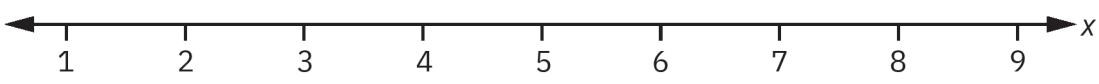
(a) ( ) [2]

(b) On the grid above, draw the vector $\bar{a}$. [1]

16 Emma and Liam share a prize in the ratio 3 : 7.
Liam receives £200 more than Emma.
How much money does Emma receive?

£ ..... [3]

17 Solve $4x + 2 \geq 18$.
Show your solution on the number line.



[4]

18 (a) Write 9 900 000 in standard form.

(a) ..... [1]

(b) Write 4.58×10^4 as an ordinary number.

(b) ..... [1]

19 A bicycle is on sale for £192.50 after a discount of 15% off the normal price.
Calculate the normal price of the bicycle.

£ ..... [3]

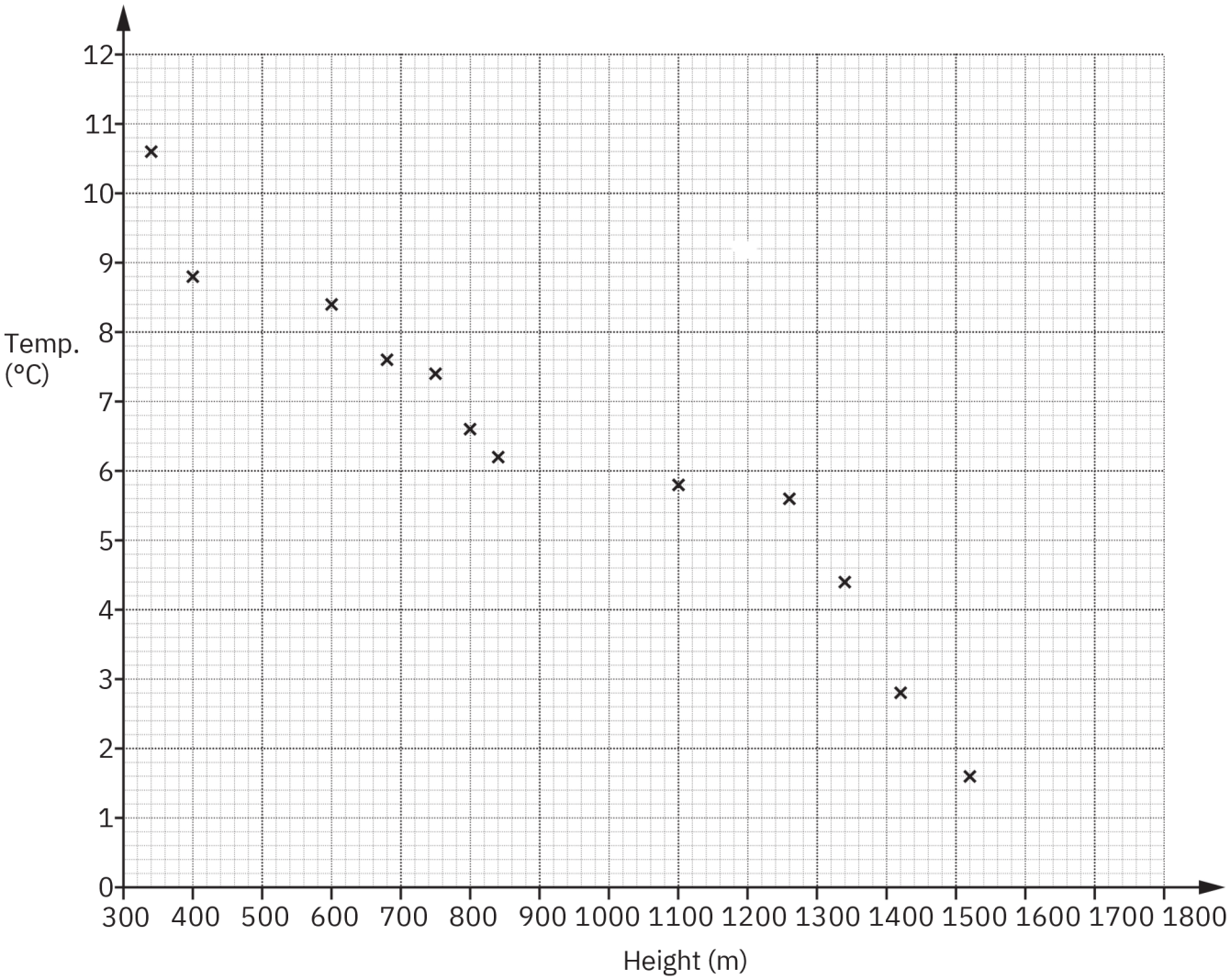
20 This list represents four numbers.

75 y $y + 2$ 3y

The mean of the four numbers is 100.
Work out the values of the numbers.
You must show your working.

75 .... [5]

21 The scatter diagram shows the midday temperature at 12 different heights on a mountain.



(a) The table has the information for 2 more heights.

Plot these on the scatter diagram.

Height (m)	500	1600
Temperature (°C)	8	1

[2]

(b) Describe the type of correlation shown in the scatter diagram.

(b) ..... [1]

(c) By drawing a line of best fit, estimate the temperature at 1000 m.

(c) .....°C [2]

[1]

(d) Circle the outlier on the scatter diagram.

(e) Explain why using the scatter diagram to estimate the temperature at 1800 m may be unreliable.

.....

.....

(f) Find the percentage of the 15 temperatures which are below 6 °C.

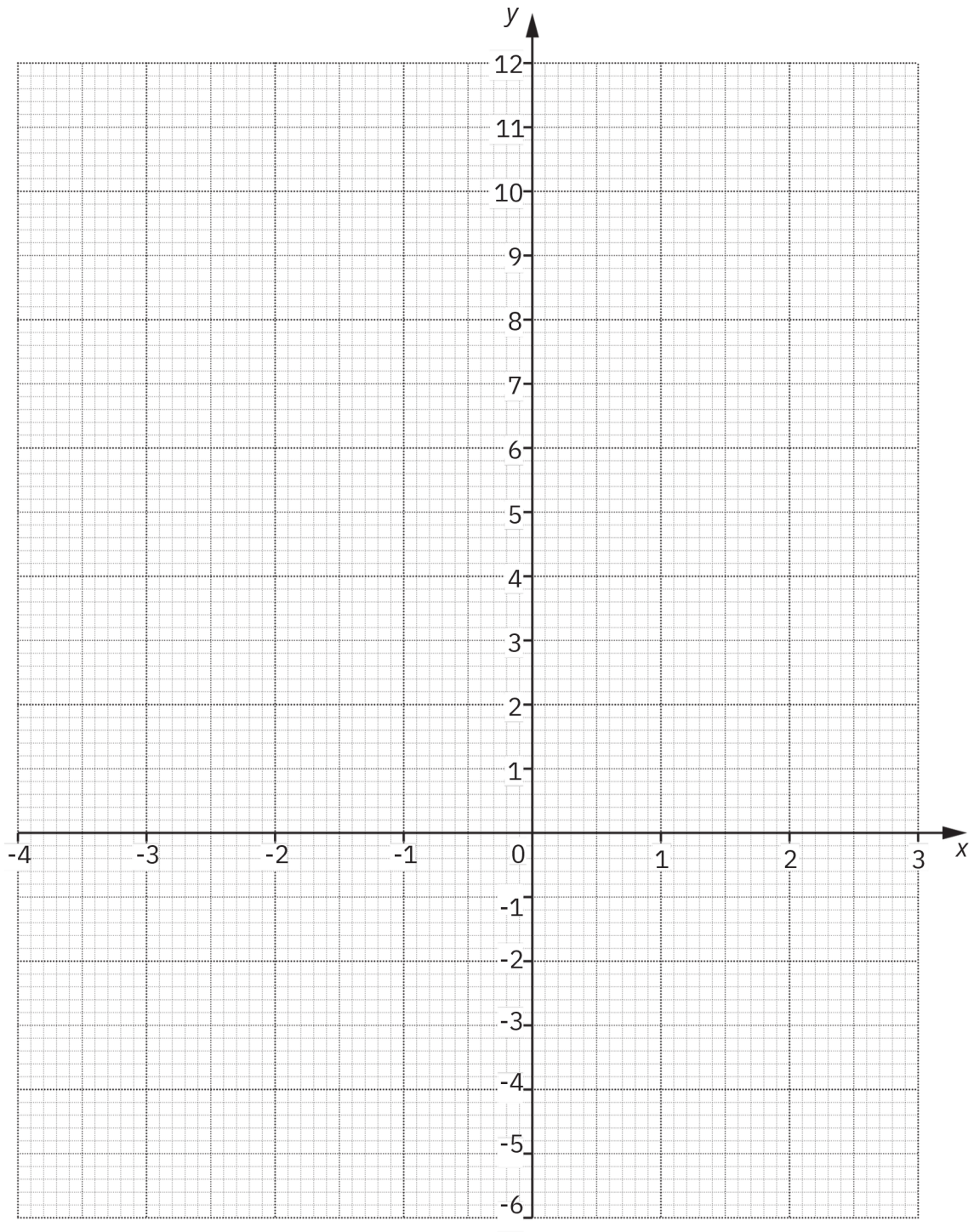
(f) .....% [3]

22 (a) Complete this table for $y = x^2 - 4$

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

[2]

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



[3]

(c) Use the graph to solve the equation $x2 - 4 = 0$.
Give your answers to 1 decimal place.

(c) x = ... or x = ... [2]

23 Five friends are going camping together.
They each carry a backpack.
The weight of each backpack is 18 kg, correct to the nearest kilogram.

Complete the error interval for the weight, w kg, of one backpack.

(a) ..... < w <..... [2]

(b) The friends can only take their equipment if the total weight of their five backpacks is less than 90 kg.
Can the friends be certain that they will not exceed this weight limit?
Show how you decide.

..... because .....

.....

.....[3]

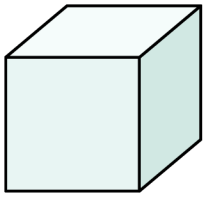
24 Ivy buys 5 drinks and 3 cakes for £20.50
Charlie buys 2 drinks and 6 cakes for £15.50.
Assume that each drink costs the same and that each cake costs the same.
Calculate the cost of one drink and the cost of one cake.
You must show your working.

Cost of one drink £ .....
Cost of one cake £ ..... [5]

25 The volume of a cube is 125 cm^3.

Calculate the total surface area of the cube.

Give the units of your answer.



volume = 125 cm^3

.....

..... cm [5]

END OF QUESTION PAPER