A

AQA

Surname _____

Other Names _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

GCSE MATHEMATICS

F

Foundation Tier Paper 1 Non-Calculator

8300/1F

Tuesday 6 November 2018 Morning

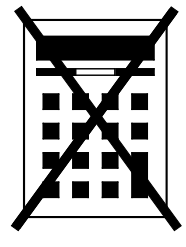
Time allowed: 1 hour 30 minutes

At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.

[Turn over]

For this paper you must have:

- **mathematical instruments**



You must NOT use a calculator.

INSTRUCTIONS

- **Use black ink or black ball-point pen. Draw diagrams in pencil.**
- **Answer ALL questions.**
- **You must answer the questions in the spaces provided. Do not write on blank pages.**
- **Do all rough work in this book. Cross through any work you do not want to be marked.**

INFORMATION

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

ADVICE

In all calculations, show clearly how you work out your answer.

DO NOT TURN OVER UNTIL TOLD TO DO SO

Answer ALL questions in the spaces provided.

1 Work out (–3) + (–8)

Circle your answer. [1 mark]

–5	5	–11	11

2 What does the longest bar in a bar chart represent?

Circle your answer. [1 mark]

mean	median
mode	range

3 Work out 1.1 – 0.15

Circle your answer. [1 mark]

0.95 1.05 0.85 1.085

4 On a circle, which of these is ALWAYS longer than the diameter?

Circle your answer. [1 mark]

chord arc

radius circumference

[Turn over]

5 Work out 83×26 [3 marks]

Answer

7

6 The cost of 3 calendars is £18

Work out the cost of 5 calendars.
[2 marks]

Answer £ _____

7 A helicopter blade does 3206 full turns in 7 minutes.

Work out the number of full turns per minute. [2 marks]

Answer

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[Turn over]

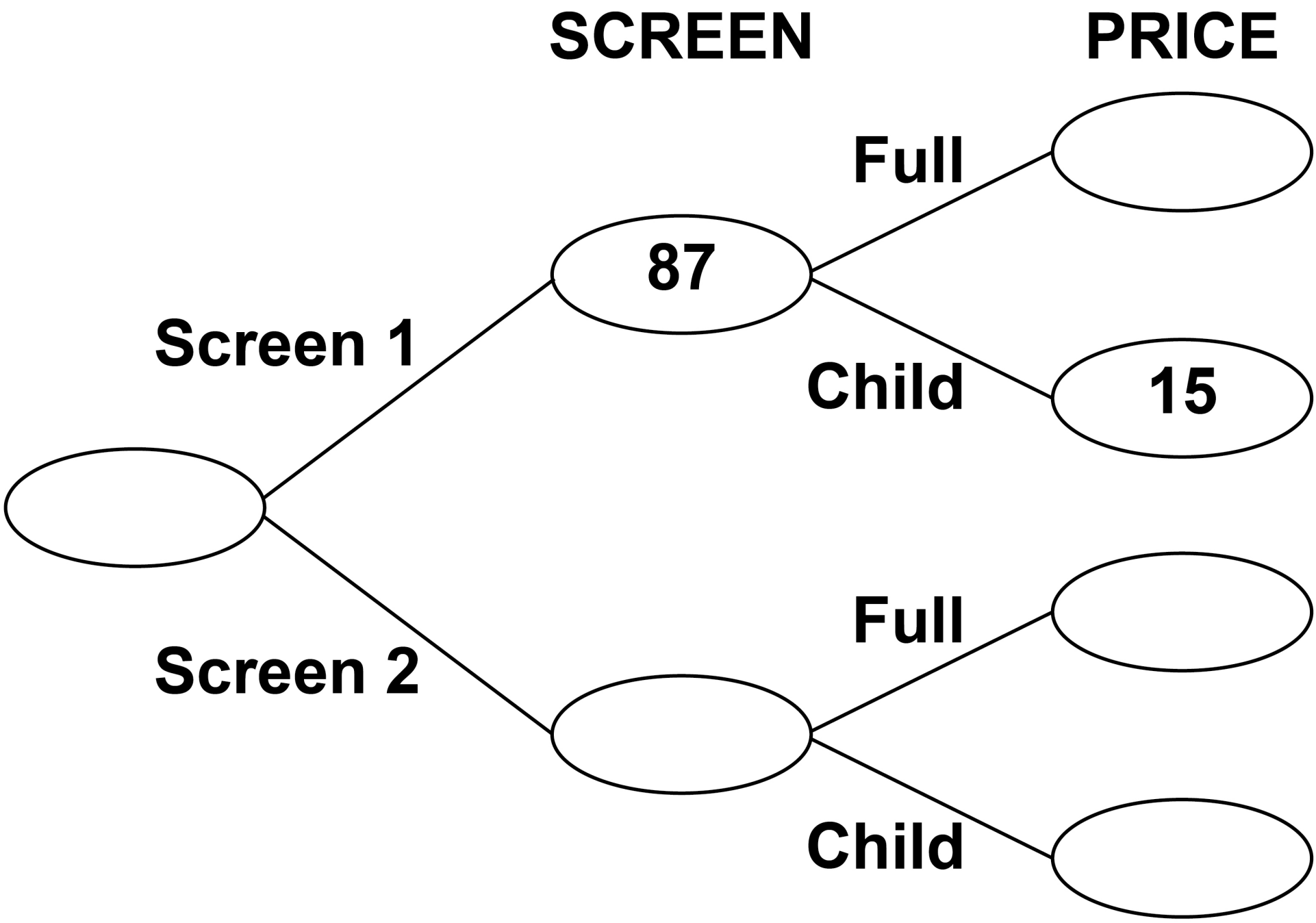
8 At a cinema, films are shown on Screen 1 and Screen 2

Customers pay full price or child price.

There are three times as many customers in Screen 2 as Screen 1

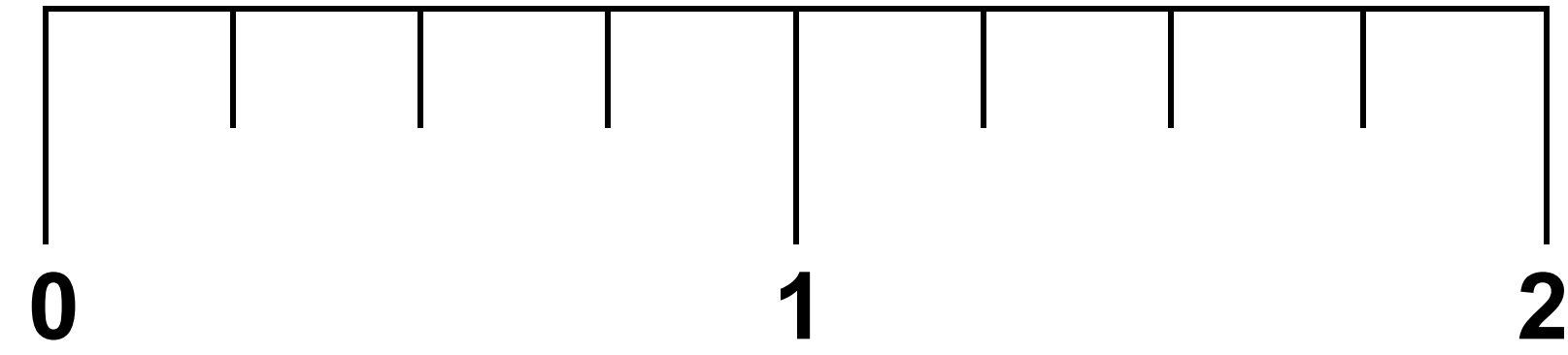
68 customers paid child price.

Complete the frequency tree on page 11. [5 marks]



9 Work out the fraction that is halfway between $\frac{1}{2}$ and $1\frac{1}{4}$

[3 marks]



Answer

10 x is a positive integer.

$35 \div x$ is a positive integer.

Work out the FOUR possible values of x. [2 marks]

Answer

11 A fair dice has six sides, numbered 1 to 6

After it is rolled, five of the numbers can be seen.

11 (a) Write down the probability that one of these five numbers is 2

[1 mark]

Answer _____

11 (b) **Work out the GREATEST possible sum of the five numbers. [2 marks]**

Answer _____

8

12 Work out $\frac{2}{7} + \frac{6}{7}$

Circle your answer. [1 mark]

$1\frac{1}{7}$ $\frac{8}{14}$ $\frac{8}{49}$ $1\frac{5}{7}$

13 Work out $4 + 3 \times 5 - 1$

Circle your answer. [1 mark]

16 18 28 34

14 The nth term of a sequence is $5n - 2$

Work out the 3rd term.

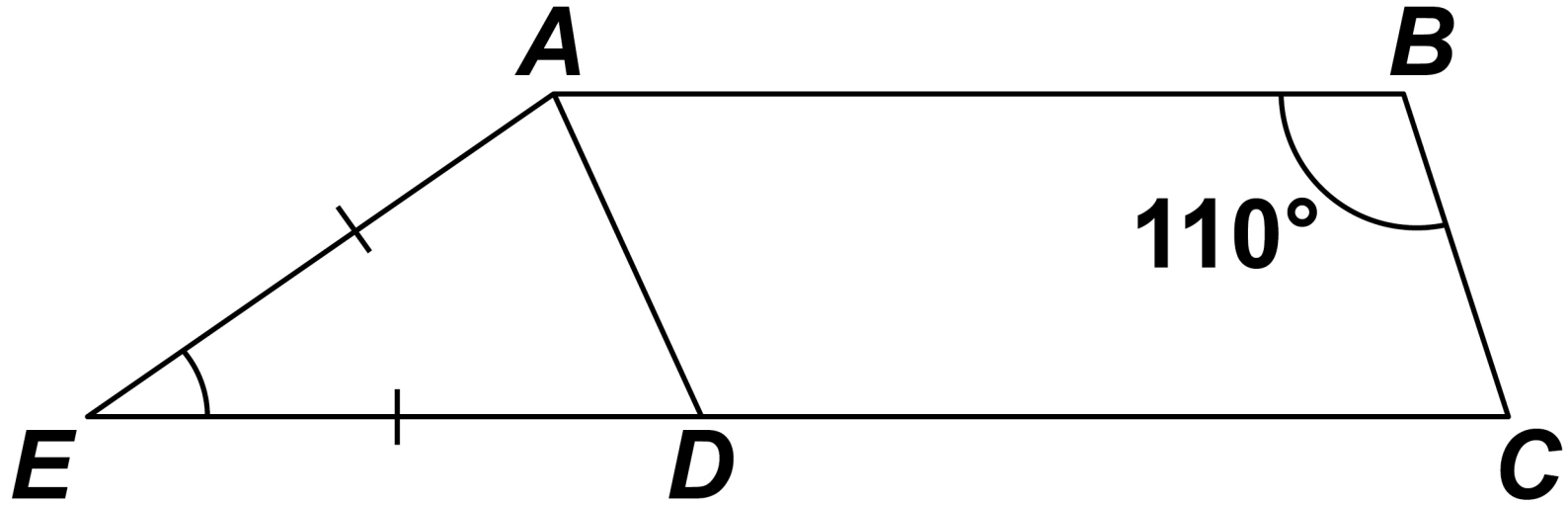
Circle your answer. [1 mark]

51 5 123 13

15 **Trapezium *ABCE* is made from parallelogram *ABCD* and isosceles triangle *ADE*.**

AE* = *DE

The diagram is not drawn accurately.



Work out the size of angle *AED*.
[3 marks]

Answer _____ degrees

16 $a : b = 1 : 6$

$a : c = 3 : 1$

How many times bigger is b than c?
[2 marks]

Answer _____

8

17 (a) Laura wants to work out 3% of 1700

Her method is 1700×0.3

Is her method correct?

Tick a box.

☐ Yes ☐ No

Give a reason for your answer.
[1 mark]

17 (b) Laura also wants to work out $\frac{30}{29}$ of 60

Her answer is 58

Is her answer correct?

Tick a box.

☐ Yes ☐ No

Give a reason for your answer.
[1 mark]

18 Here are five shapes, A to E.

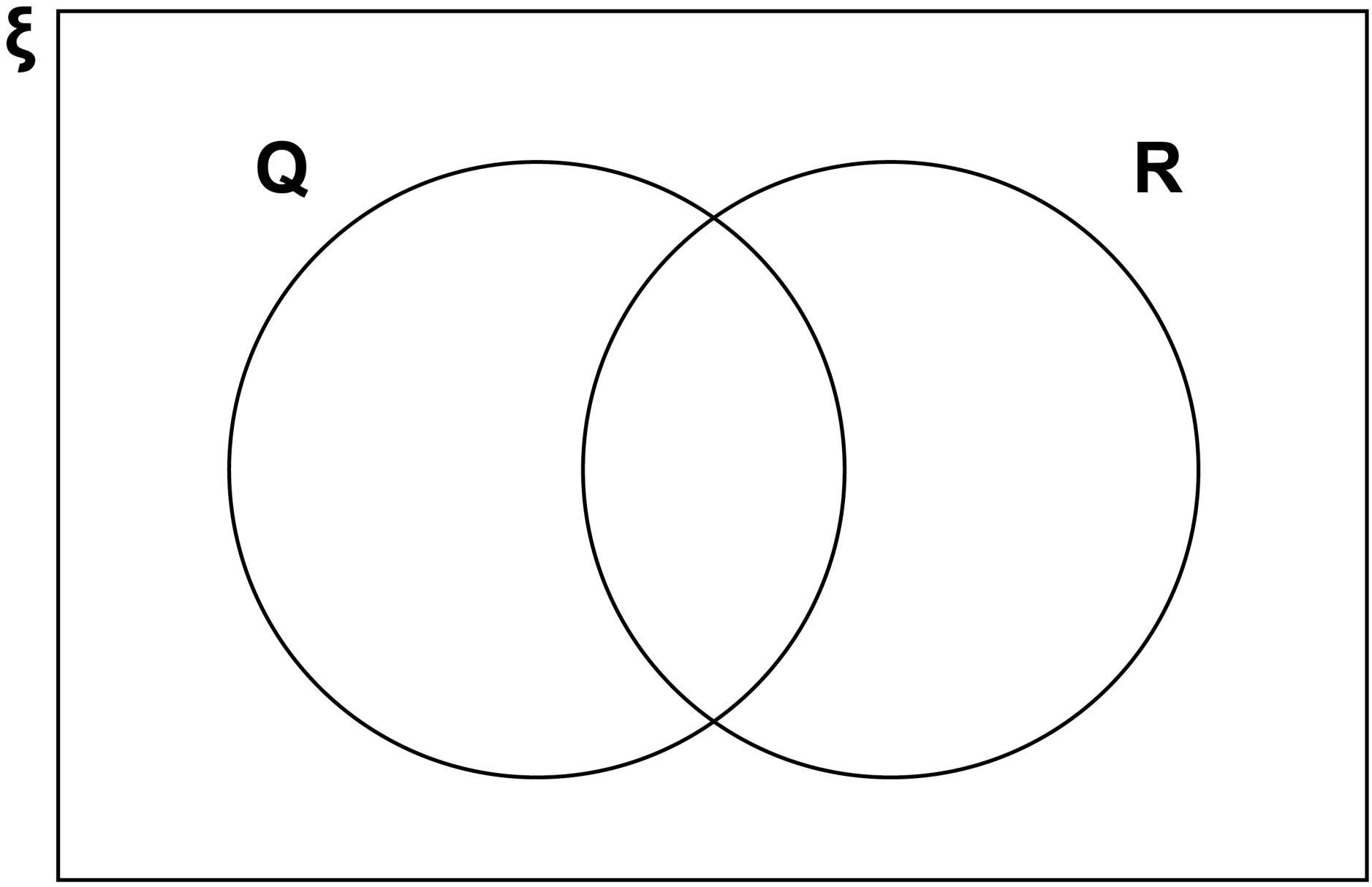
A	Parallelogram
B	Regular pentagon
C	Rhombus
D	Scalene triangle
E	Trapezium

In the Venn diagram,

ξ is the set of all shapes

Q is the set of quadrilaterals

R is the set of shapes which ALWAYS have rotational symmetry.



Complete the Venn diagram with the letters A to E. [3 marks]

5

19 $a = 7$ and $b = 2$

Work out the value of $\frac{a}{b} - a^b$

[3 marks]

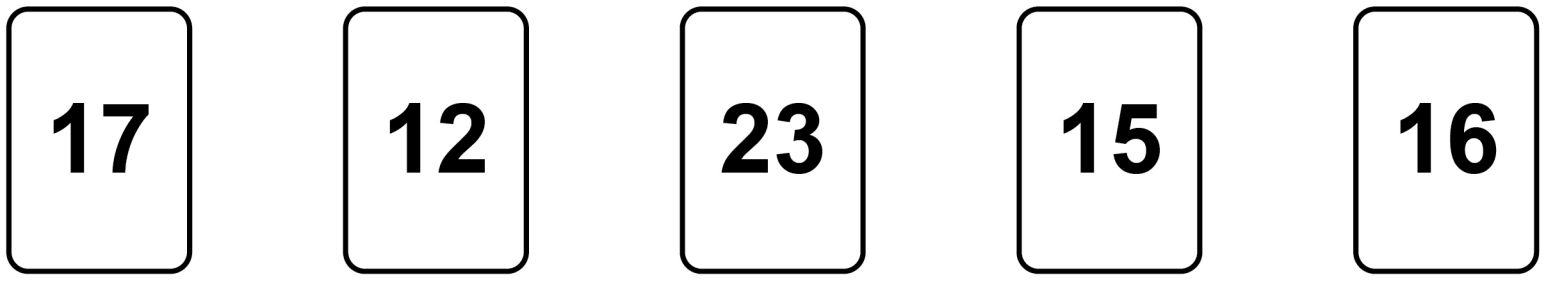
Answer

20 Solve $3x - 8 = 19$ [2 marks]

$x =$ _____

[Turn over]

21 Here are five number cards.



Two of the five cards are picked at random.

Work out the probability that the total of the two numbers is MORE THAN 30 [3 marks]

Answer _____

8

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[Turn over]

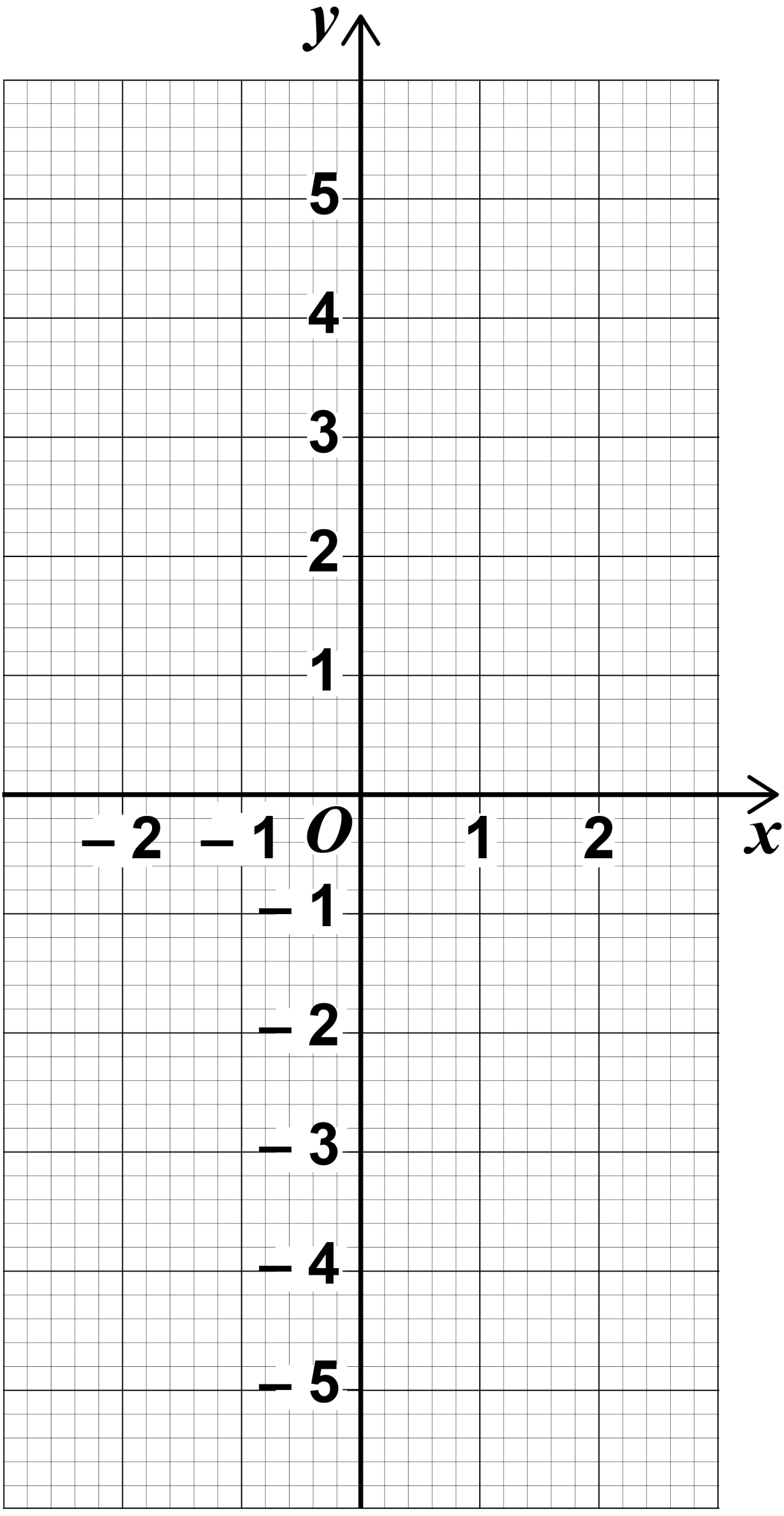
22 (a) Complete the table of values for $y = x^2$ [1 mark]

x	–2	–1	0	1	2
y					

22 (b) On page 29, draw the graph of $y = x^2$ for values of x from –2 to 2 [2 marks]

22 (c) Use your graph to estimate the value of $\sqrt{2.6}$ [2 marks]

Answer _____



[Turn over]

23 Two consecutive whole numbers are n and $n + 1$

23 (a) Simplify $n - (n + 1)$ [1 mark]

Answer

23 (b) Multiply out $n(n + 1)$ [1 mark]

Answer

23 (c) The two numbers are added.

Show that the answer must be an odd number. [2 marks]

[Turn over]

9

24 **Circle the value of cos 30º**
[1 mark]

$\frac{1}{2}$ $\frac{\sqrt{3}}{2}$ **0** **1**

25 Work out $8\frac{1}{2} \div 2\frac{2}{3}$

Give your answer as a mixed number. [4 marks]

Answer _____

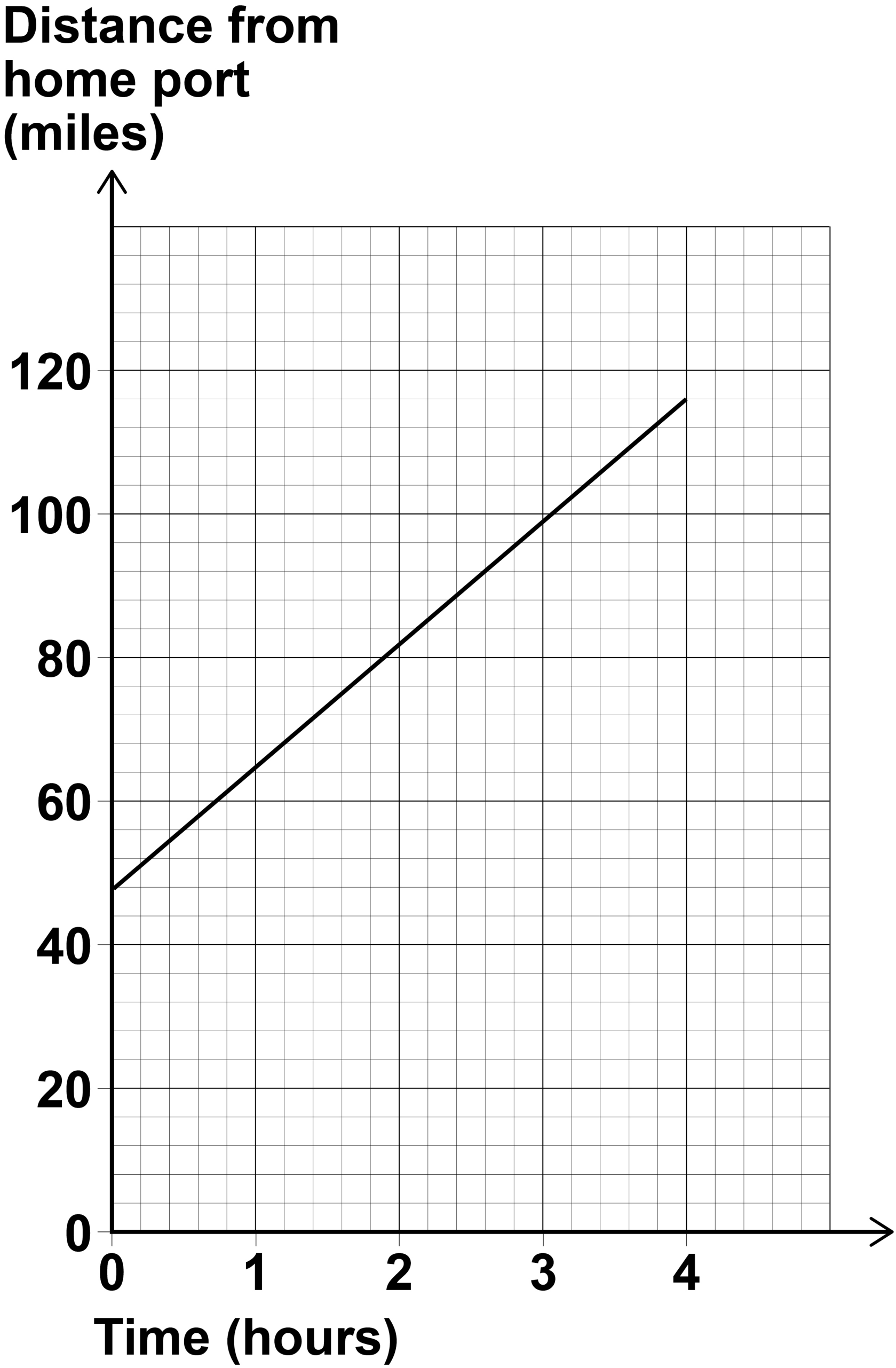
26 A ship is sailing in a straight line from its home port.

The distance-time graph, on page 35, shows 4 hours of the journey.

Work out the speed of the ship during these 4 hours. [3 marks]

Answer _____ mph

8



[Turn over]

27 Kim works at an airport in the UK.

She records the number of planes landing between 10 am and 2 pm each day.

The tables show the data for the first 10 days in January.

Day	1	2	3	4	5
Number of planes	148	151	147	155	153

Day	6	7	8	9	10
Number of planes	147	155	102	151	154

27 (a) The airport was affected by fog on one of the days.

Which day do you think it was?

Give a reason for your answer.
[1 mark]

Day _____

Reason _____

_____

_____

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27 (b) Kim uses the data to predict how many planes will land at the airport in a year.

In her method, she

uses an estimate of 150 planes in each 4-hour period throughout the day

assumes the same number of planes each day.

Work out her prediction.
[3 marks]

Answer _____

27 (c) In fact,

fewer planes land in winter than in summer

fewer planes land at night than during the day.

What does this tell you about Kim's prediction?

Tick ONE box.

☐ Her prediction is too low

☐ Her prediction is too high

☐ Her prediction could be too low or too high

Give a reason for your answer.
[2 marks]

_____

_____

_____

_____

_____

6

28 The sum of the angles in any quadrilateral is 360º

For example, in a rectangle
4 × 90º = 360º

Zak writes,

5 × 90º = 450º so the sum of the angles in any pentagon must be 450º

Is he correct?

Tick a box.

☐ Yes ☐ No

Show working to support your answer. [2 marks]

29 $\sqrt{6^2+8^2} = \sqrt[3]{125\,a^3}$

Work out the value of a. [4 marks]

Answer

30 Work out the percentage increase from 80 to 280 [3 marks]

Answer _____ %

[Turn over]

9

31 Solve $x^2 - x - 12 = 0$ [3 marks]

Answer

END OF QUESTIONS

3

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48

There are no questions printed on this page

For Examiner's Use	
Pages	Mark
4–6	
7–11	
12–15	
16–19	
20–23	
24–26	
28–31	
32–35	
36–41	
42–45	
46	
TOTAL	