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

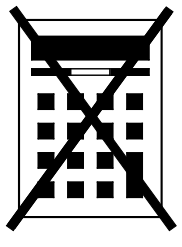
At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.

[Turn over]

N0V188300 1F01

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

BLANK PAGE

[Turn over]

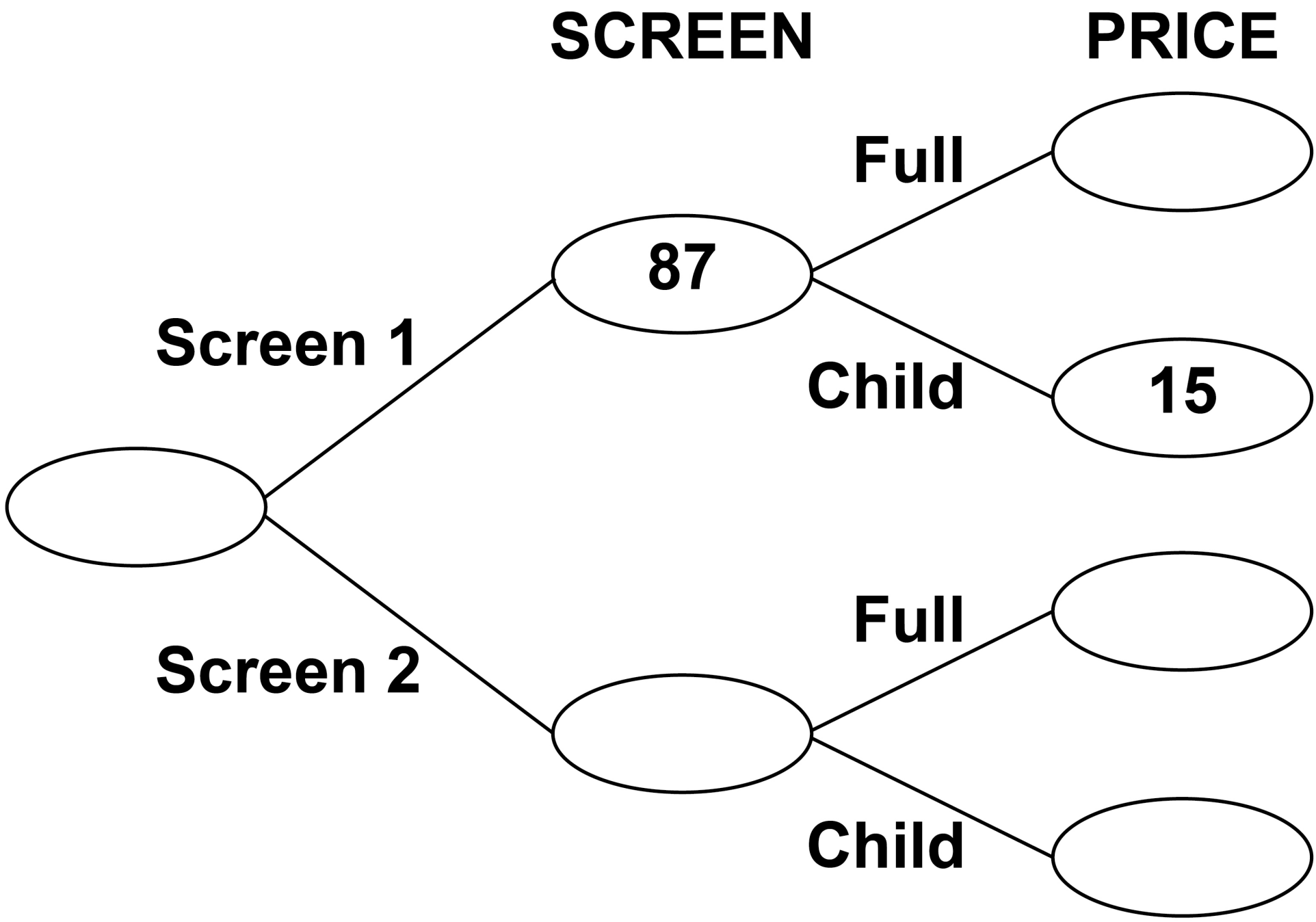
8 At a cinema, films are shown on Screen 1 and Screen 2

Customers pay full price or child price.

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

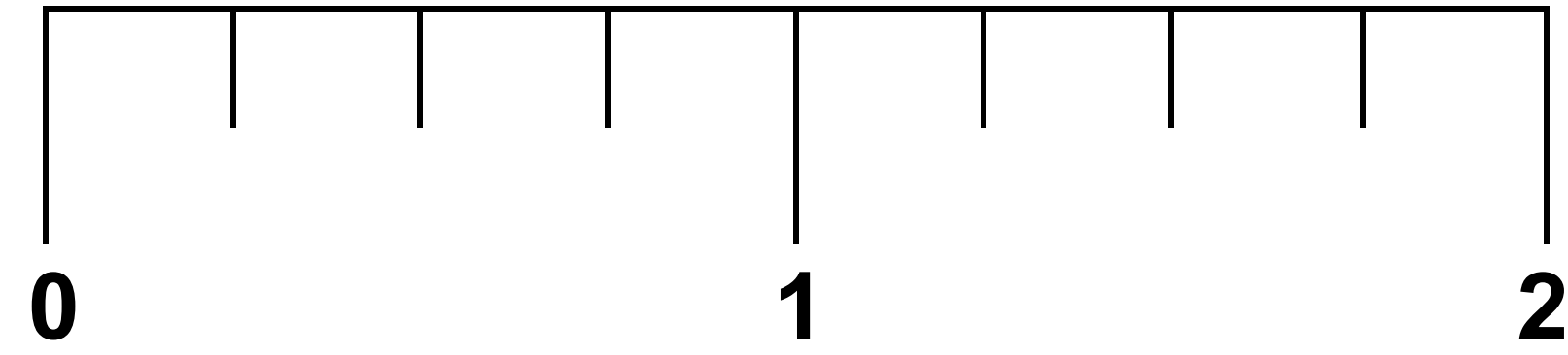
68 customers paid child price.

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


SCREEN
PRICE
Full
87
Screen 1
Child
15
Full
Screen 2
Child

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 ÷ 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

16

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 × 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.

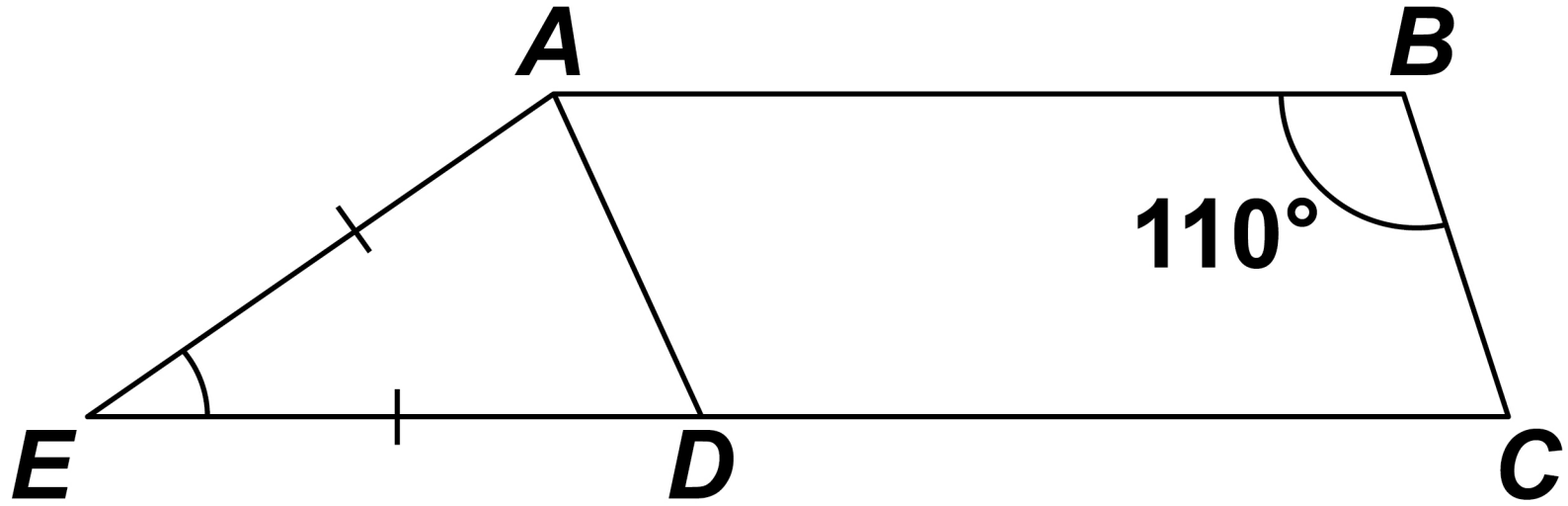
Circle your answer. [1 mark]

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.

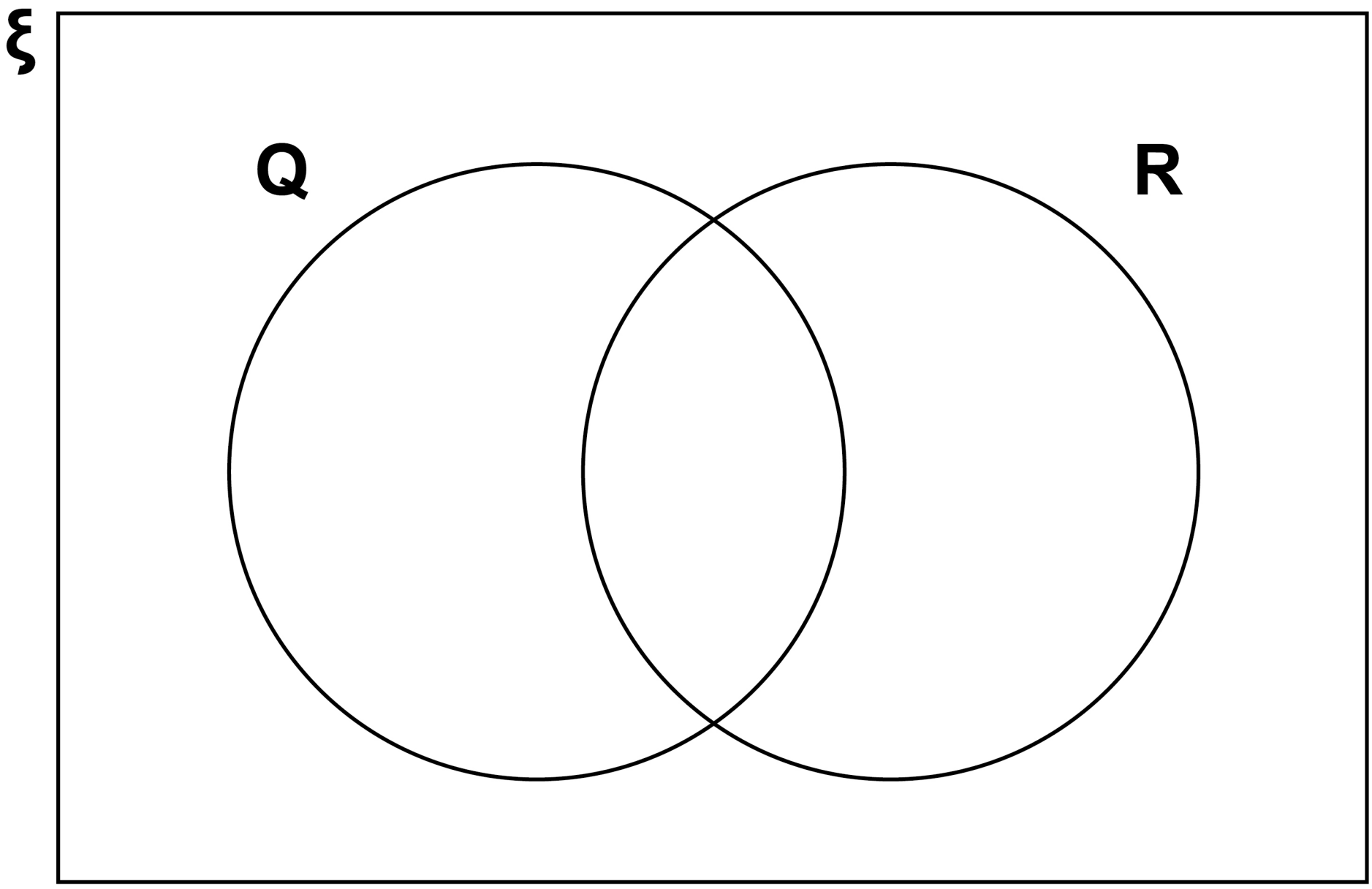
A	Parallelogram
B	Regular pentagon
C	Rhombus
D	Scalene triangle
E	Trapezium

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]

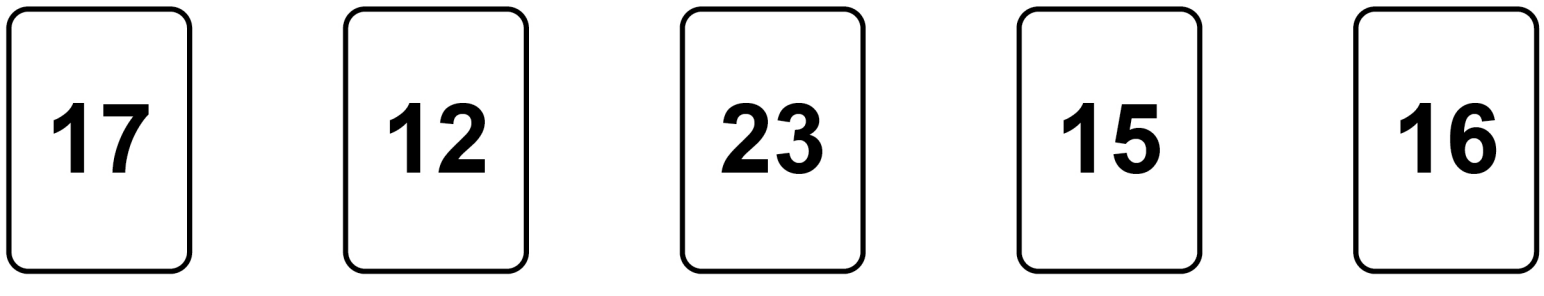
Answer

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]

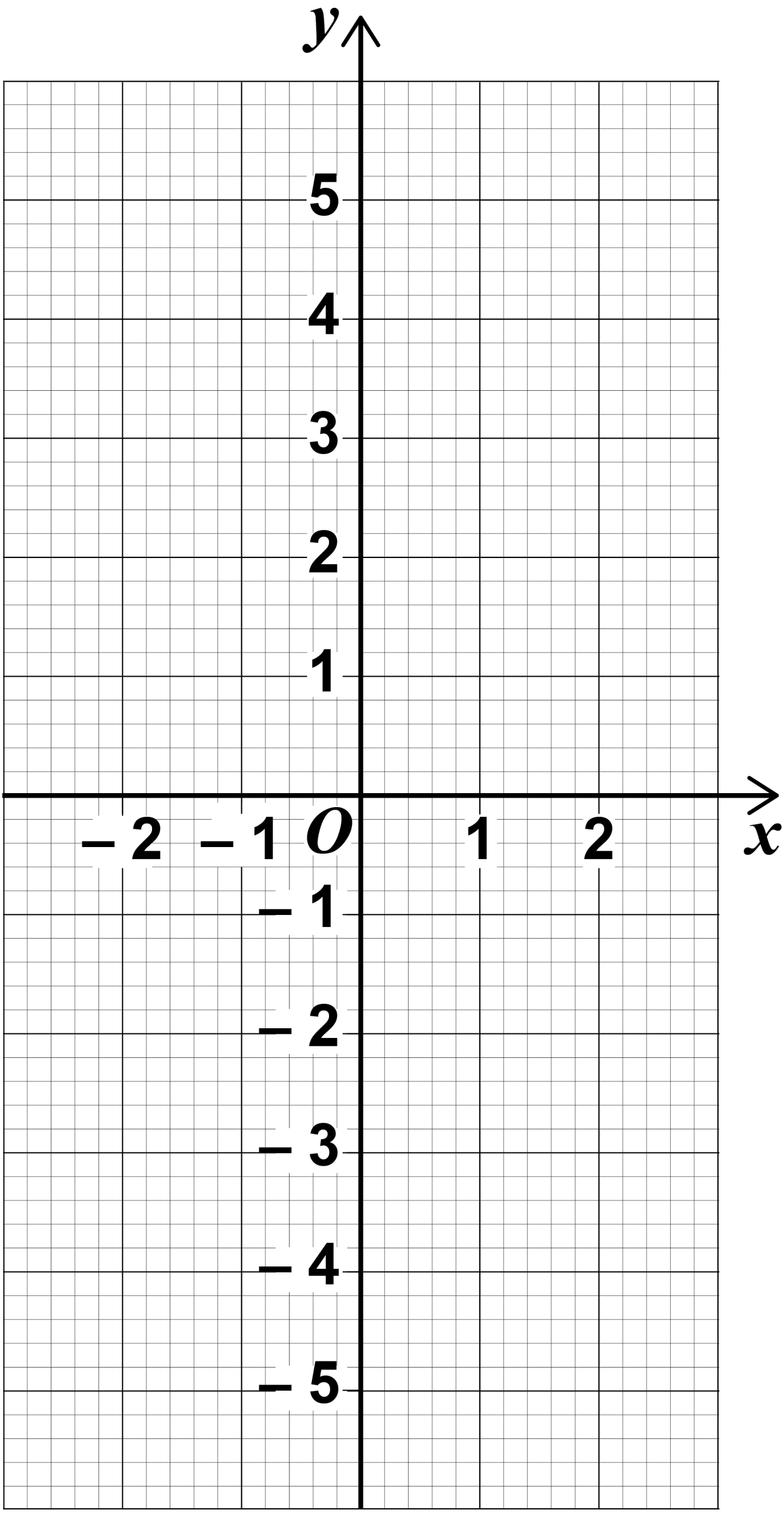
22 (a) Complete the table of values for $y = x^2$ [1 mark]

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]

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 _____

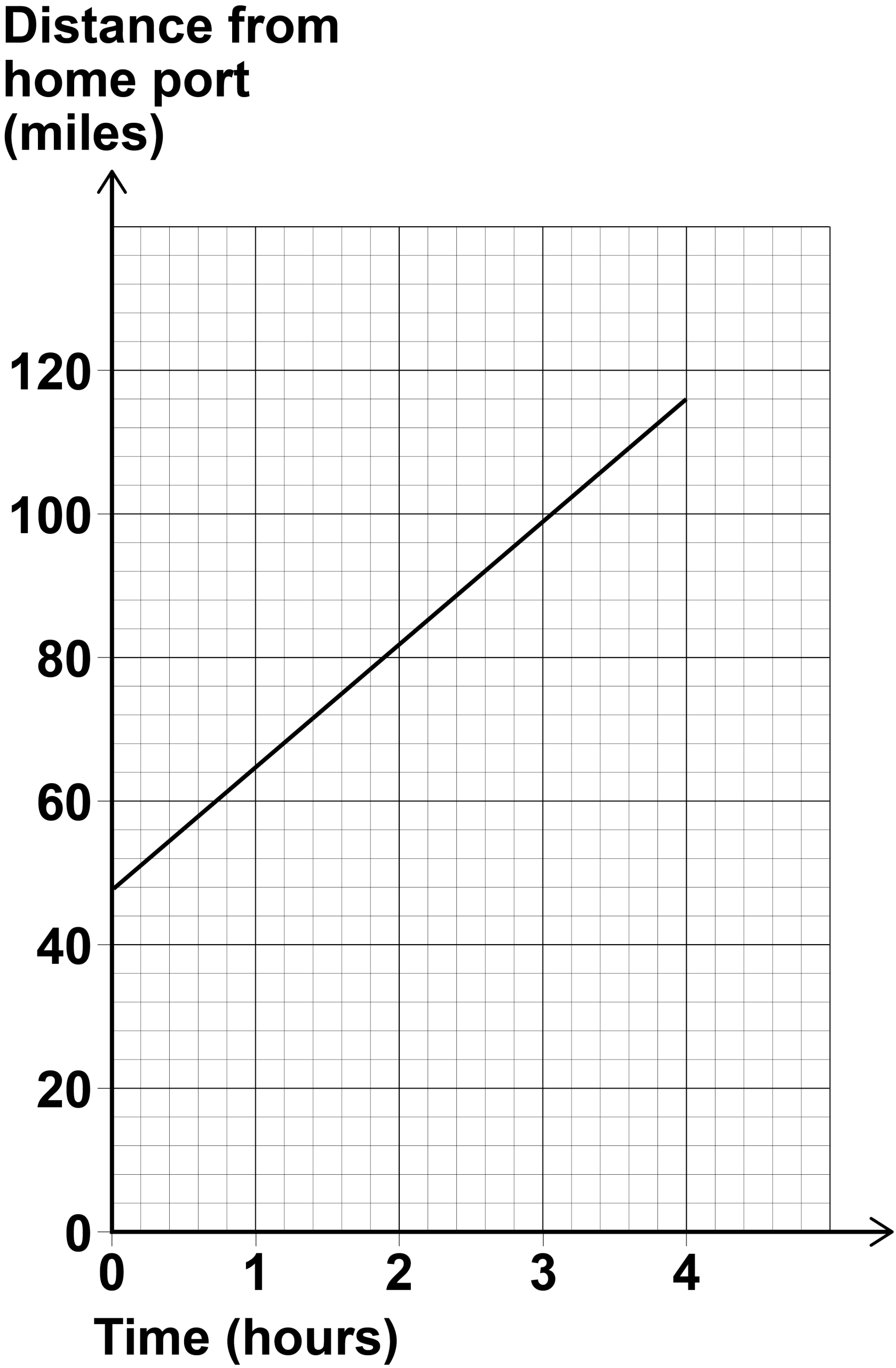
26 A ship is sailing in a straight line from its home port.

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


Distance from home port (miles)
120
100
80
60
40
20
0
0
1
2
3
4
Time (hours)

[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 _____

_____

_____

[Turn over]

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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 _____

[Turn over]

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]

_____

_____

_____

_____

[Turn over]

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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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	