

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname _____

Forename(s) _____

Candidate signature _____

GCSE MATHEMATICS

Past Paper
Website
Home



F

Foundation Tier Paper 1 Non-Calculator

Tuesday 21 May 2019

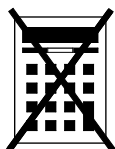
Morning

Time allowed: 1 hour 30 minutes

Materials

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.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or 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 more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

For Examiner's Use	
Pages	Mark
2–3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16–17	
18–19	
20–21	
22–23	
24–25	
26	
TOTAL	

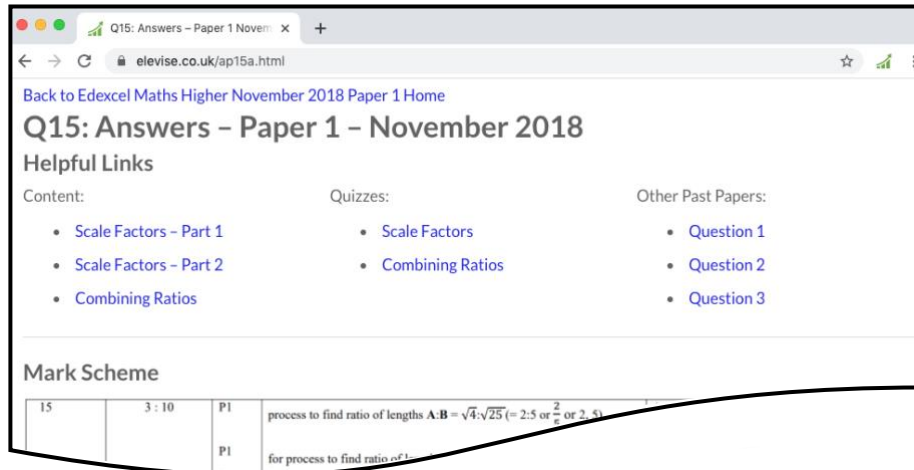
Advice

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



How the Past Papers work

Every past paper question has a corresponding webpage that has the mark scheme and worked solutions for that particular question. There are also helpful links to content for the concepts used to answer the question, quizzes that you can use to try some of the concepts and similar past paper questions. An example of a webpage for a question is given below:



Q15: Answers - Paper 1 - November 2018

Helpful Links

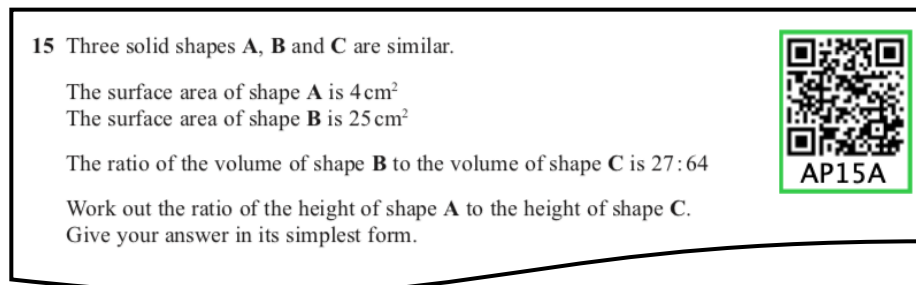
Content:	Quizzes:	Other Past Papers:
<ul style="list-style-type: none">Scale Factors - Part 1Scale Factors - Part 2Combining Ratios	<ul style="list-style-type: none">Scale FactorsCombining Ratios	<ul style="list-style-type: none">Question 1Question 2Question 3

Mark Scheme

Q	Content	Mark	Process
15	3 : 10	P1	process to find ratio of lengths A:B = $\sqrt{4 \cdot \sqrt{25}} = 2.5$ or $\frac{2}{5}$
		P1	for process to find ratio of 1

How to get to the webpage

Every past paper question has a QR code next to it, such as:




15 Three solid shapes A, B and C are similar.

The surface area of shape A is 4 cm^2
The surface area of shape B is 25 cm^2

The ratio of the volume of shape B to the volume of shape C is 27 : 64

Work out the ratio of the height of shape A to the height of shape C.
Give your answer in its simplest form.



AP15A

You can get to the corresponding webpage in 3 different ways:

- 1) Scanning the QR code with the camera on a smart phone or tablet.
- 2) Typing the code that is underneath the QR code at the end of www.elewise.co.uk/. For this question, the code is AP15A, so you would type www.elewise.co.uk/AP15A into the address bar to obtain the webpage. If you would like to see the question rather than the answers, you change the A at the end of the code to a Q; you would type www.elewise.co.uk/AP15Q
- 3) Clicking on the QR code if you are viewing the past paper as a PDF or on a web browser.

www.elewise.co.uk



Answer **all** questions in the spaces provided

1 Which type of angle is the largest?

Circle your answer.



[1 mark]

right

reflex

obtuse

acute

2 Solve $4x = 8$

Circle your answer.



[1 mark]

 $x = 0.5$ $x = 2$ $x = 4$ $x = 32$ 3 Work out $10 + (-4)$

Circle your answer.



[1 mark]

-14

-6

6

14



4 Circle the calculation which works out half of 12

[1 mark]



$12 \div 0.5$

$2 \div 12$

$12 \times \frac{1}{2}$

$12 \div 50 \times 100$

5 (a) Work out $364.5 + 17.9 - 2.08$

[2 marks]



Answer _____

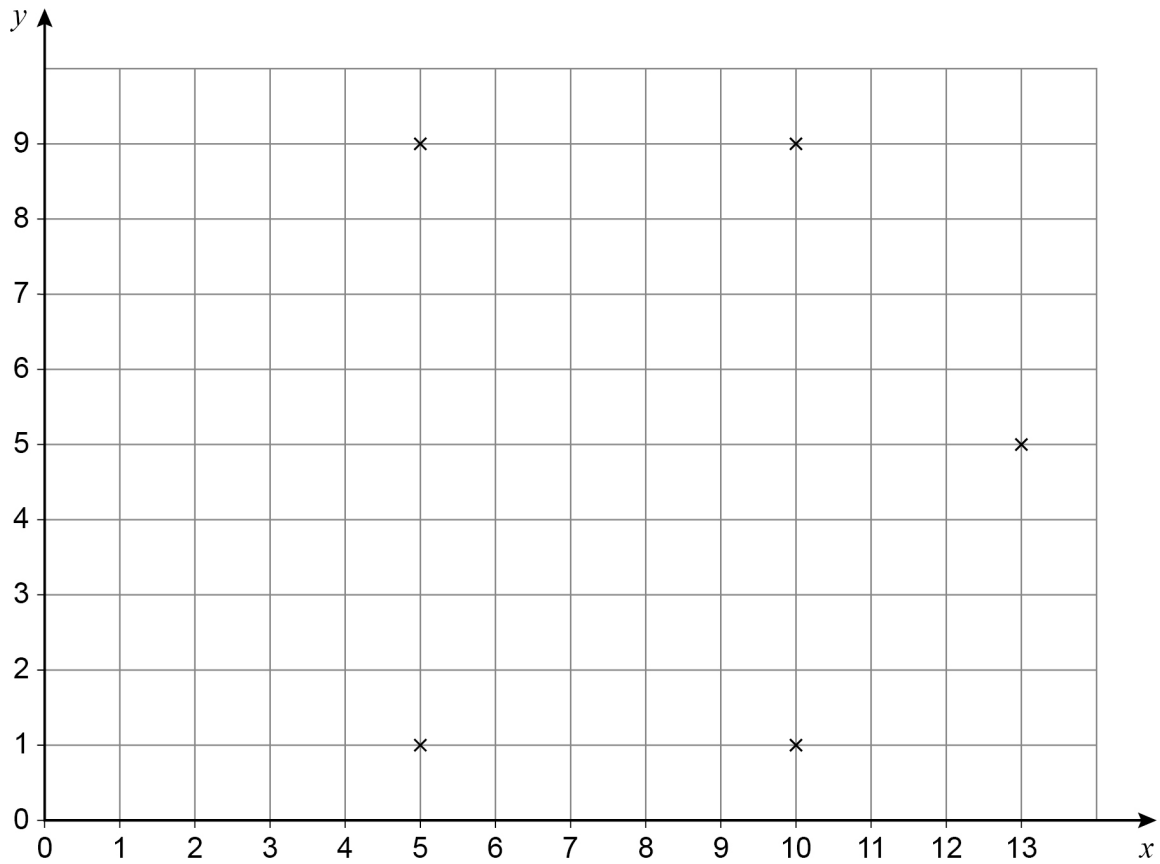
5 (b) Work out 9.36×2

[1 mark]

Answer _____



- 6 Five points are plotted on a centimetre grid.



The points are five of the vertices of a hexagon.

Each side of the hexagon has the same length.

Work out **one** possible pair of coordinates of the other vertex.

[2 marks]



Answer (_____ , _____)





Do not write
outside the
box

- 7 Amy and Brad each have some money.
Carly has no money.
Amy gives £7 to Carly.
Brad gives £5 to Carly.
- Now they all have the same amount of money.
- How much money did Amy have to begin with?

[2 marks]

Answer £ _____

Turn over for the next question

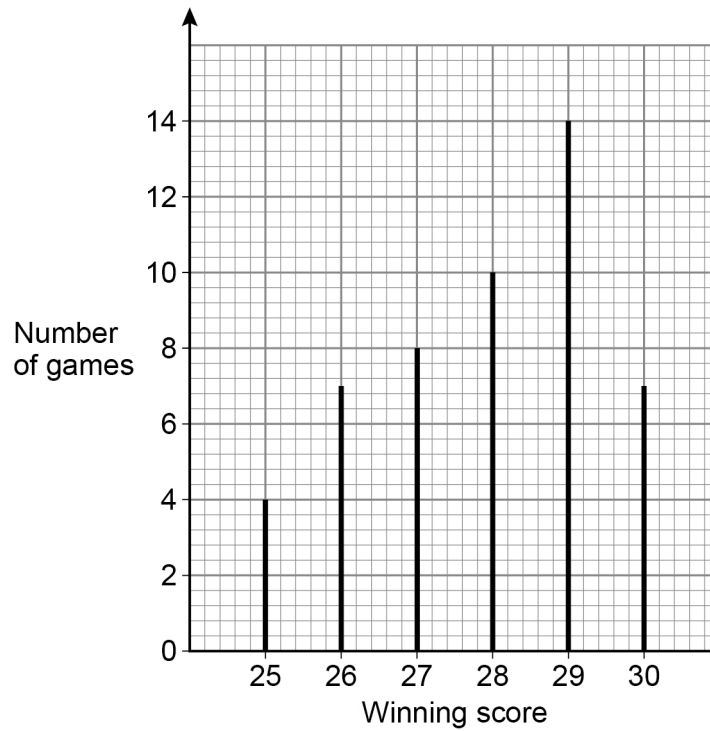
Turn over ►





Do not write
outside the
box

- 8 A game is played 50 times.
The vertical line chart shows the winning scores.



- 8 (a) Write down the mode.

[1 mark]

Answer _____



The game is played again.

- 8 (b) Use the chart to estimate the probability that the winning score is 25

[1 mark]

Answer _____

- 8 (c) Use the chart to estimate the probability that the winning score is 27 or more.

[2 marks]

Answer _____

- 9 (a) Write down **all** the factors of 18

[2 marks]

Answer _____



- 9 (b) Work out the lowest common multiple (LCM) of 12 and 15

[2 marks]

Answer _____





10 Coaches take people to a festival.
Each coach can take 50 people.

10 (a) From one city there are 820 people.
How many coaches are needed?

[3 marks]

Answer _____



- 10 (b)** From a different city 13 coaches are needed.
Each coach costs £450 to hire.
Work out the total cost of hiring 13 coaches.

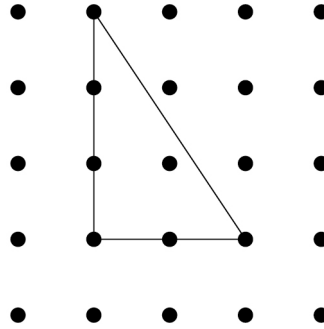
[3 marks]

Answer £ _____

Turn over for the next question

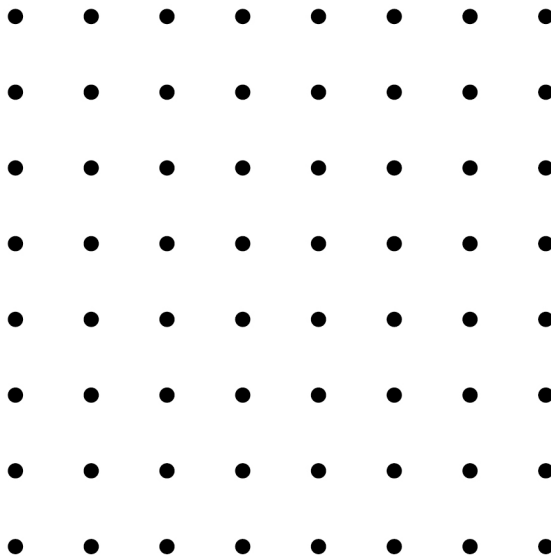


- 11 Here is a triangle on a square dotted grid.



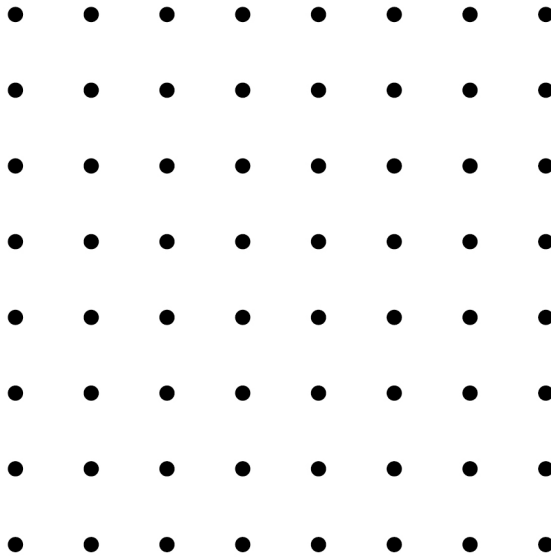
- 11 (a) On the grid below, show how you can make a parallelogram with **two** of these triangles.

[1 mark]



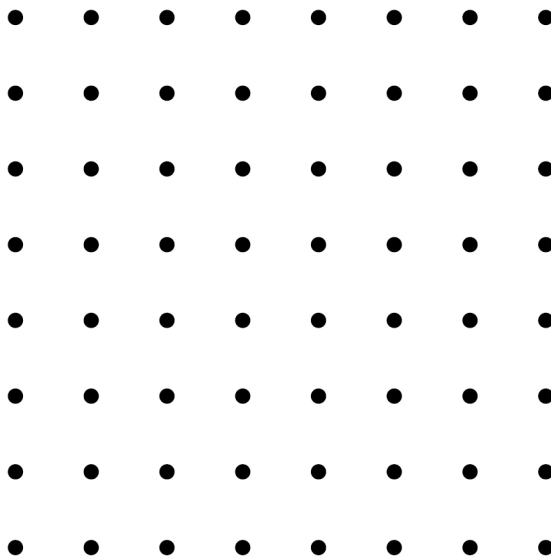
11 (b) On the grid below, show how you can make a trapezium with **three** of these triangles.

[1 mark]



11 (c) On the grid below, show how you can make a rhombus with **four** of these triangles.

[1 mark]



12 Work out 65% of 300

[3 marks]



Answer _____

13 In a game the average score was 50

Tom's score was $\frac{5}{2}$ of the average.

Circle Tom's score.



[1 mark]

125

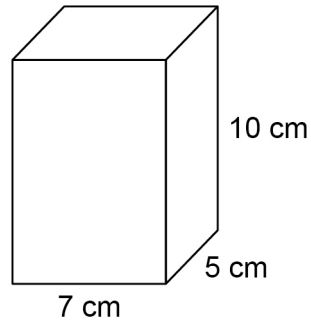
175

30

20



- 14 Here is a cuboid.



Work out the volume.

[2 marks]

Answer _____ cm^3

- 15 Circle the shape that has a uniform cross section.

[1 mark]



cone

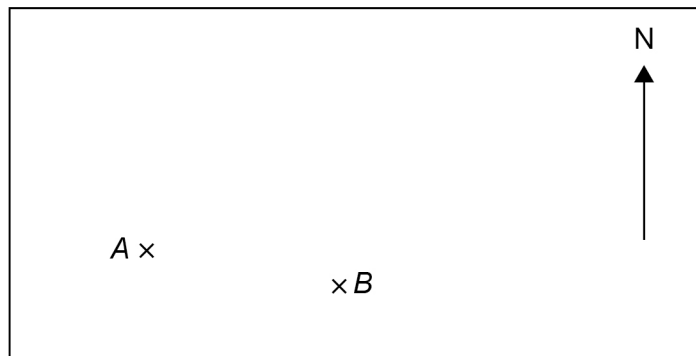
sphere

cylinder

pyramid

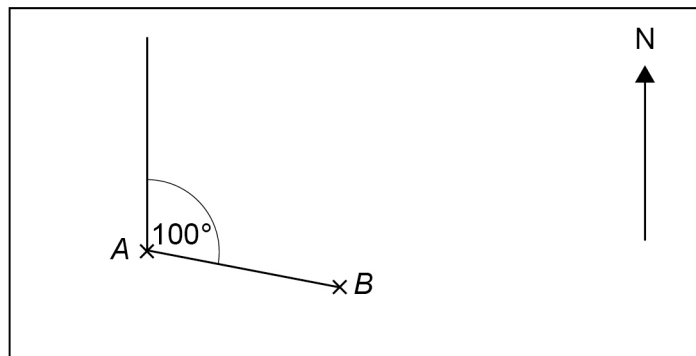


16 (a) Here is a map showing points A and B .



Kemal wants to measure the bearing of A from B .

He draws two lines and measures the angle between them.



Kemal says that the bearing of A from B is 100°

Is his method correct?

Give a reason for your answer.

[1 mark]



16 (b) On a different map, the bearing of D from C is 045°

Nina says,

“ D is North West of C .”

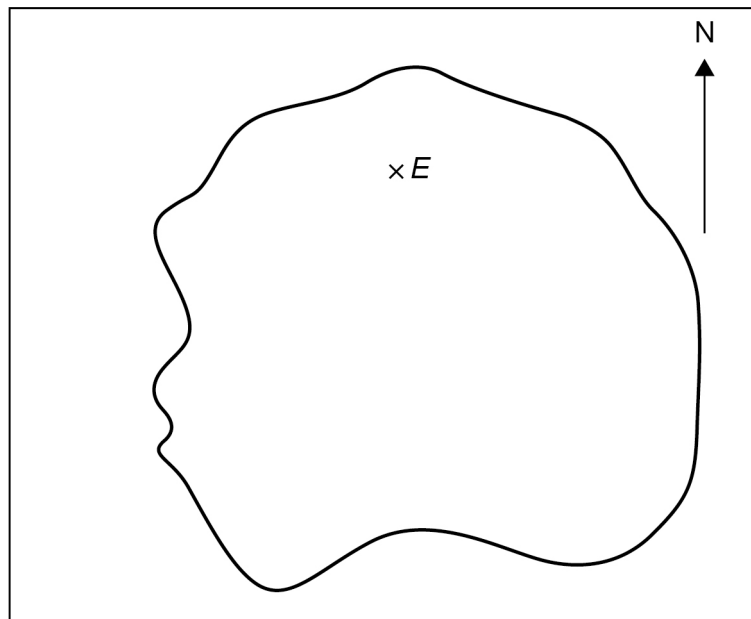
Is Nina correct?

Give a reason for your answer.

[1 mark]

16 (c) This map shows an airport, E , on an island.

Scale: 1 cm represents 100 km



A plane flies due South from the airport.

How far does it fly until it reaches the sea?

[3 marks]

Answer _____ km



17 (a) Simplify fully $56 : 24$

[2 marks]



Answer _____ :

17 (b) Write the ratio $5 : 4$ in the form $n : 1$

[1 mark]

Answer _____ :

17 (c) Share £180 in the ratio $1 : 9$

[2 marks]

Answer £ _____ and £ _____



18 Here is some data about the people listening to a radio station one day.



	Percentage	Mean number of hours listening	Range of number of hours listening
Aged 40 or under	21	1.2	4.5
Aged 41 or over	79	6.3	13.9

Compare the data for people aged 40 or under with the data for people aged 41 or over.
Make **three** comparisons.

[3 marks]

Comparison 1 _____

Comparison 2 _____

Comparison 3 _____

Turn over for the next question



19 You are given that $4a - 2b = 10$

19 (a) Write down the value of $2a - b$

[1 mark]

Answer _____



19 (b) Write down the value of $2b - 4a$

[1 mark]

Answer _____

19 (c) You are given that $4a - 2b = 10$ and $a + c = 3$

Write an expression in a , b and c that is equal to 23

Give your answer in its simplest form.

You **must** show your working.

[2 marks]

Answer _____



20 (a) Write 0.00097 in standard form.

[1 mark]

Answer _____



20 (b) Work out $\frac{3 \times 10^5}{4 \times 10^3}$

Give your answer as an ordinary number.

[2 marks]

Answer _____

Turn over for the next question

7

Turn over ►



21 Anna plays a game with an ordinary, fair dice.

If she rolls 1 she wins.

If she rolls 2 or 3 she loses.

If she rolls 4, 5 or 6 she rolls again.

When she has to roll again,

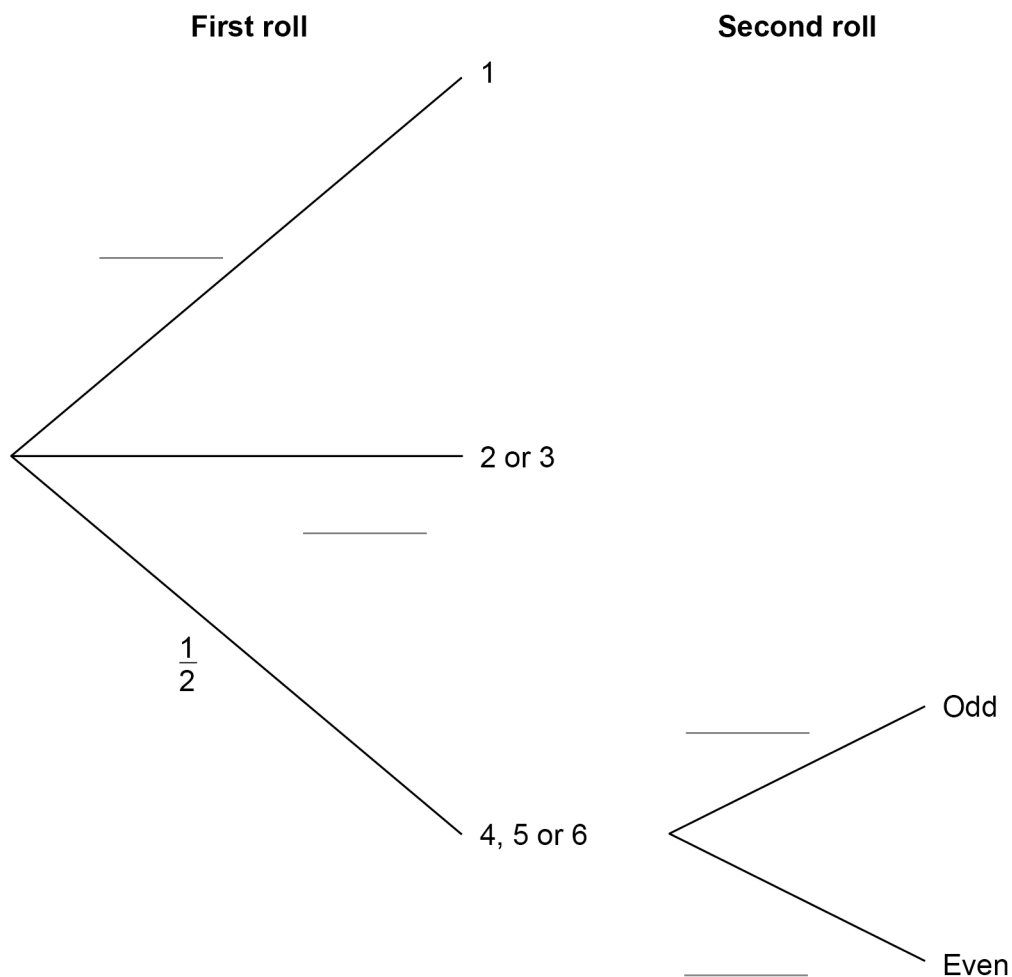
if she rolls an odd number she wins

if she rolls an even number she loses.



21 (a) Complete the tree diagram with the four missing probabilities.

[2 marks]



- 22** Three friends arrive at a party.
Their arrival increases the number of people at the party by 20%
In total, how many people are now at the party?

[2 marks]



Answer _____



23 Work out the value of $(3^{12} \div 3^5) \div (3^2 \times 3)$

[3 marks]



Answer _____

24 (a) $a + b = 0$

Which of these is equal to b ?

Circle your answer.

[1 mark]



0

 $\frac{1}{a}$ a $-a$

24 (b) $c \times d = 1$

Which of these is equal to d ?

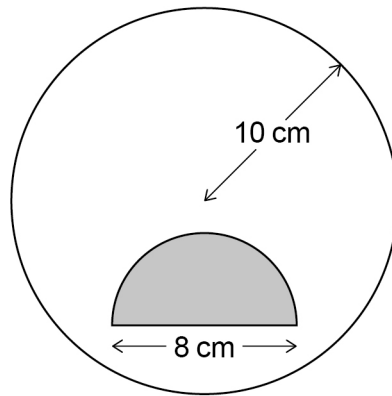
Circle your answer.

[1 mark]

1

 $\frac{1}{c}$ c $-c$ 

- 25 A shaded semicircle is inside a circle as shown.



Not drawn
accurately

The **radius** of the circle is 10 cm

The **diameter** of the semicircle is 8 cm

How many times bigger is the unshaded area than the shaded area?



KN25A

[4 marks]

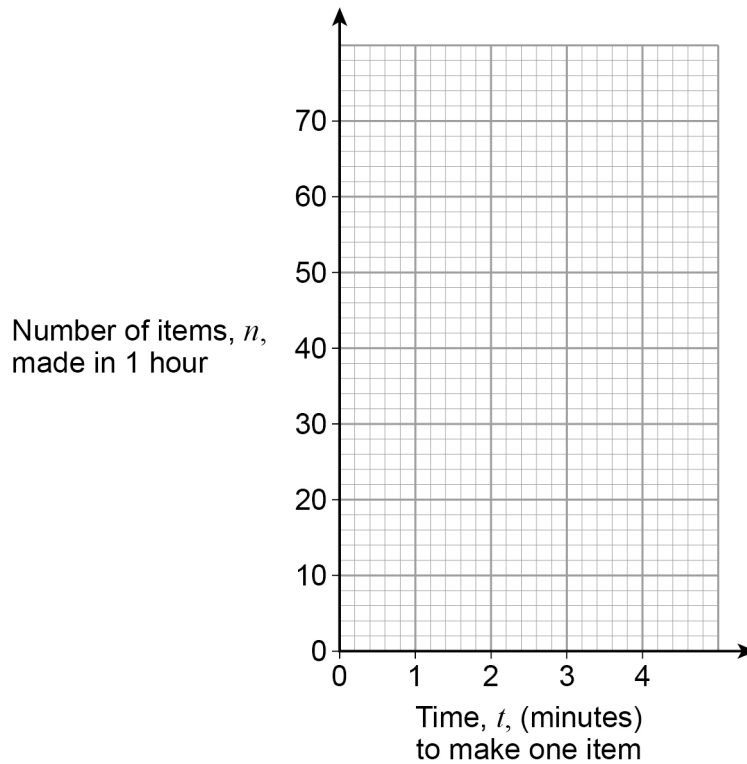
Answer _____



- 26** The number of items, n , made in 1 hour by a machine is given by $n = \frac{60}{t}$
 t is the time in minutes the machine takes to make one item.
 The value of t changes for different types of item.

- 26 (a)** On the grid below, draw the graph of $n = \frac{60}{t}$ for values of t from 1 to 4

[2 marks]



- 26 (b)** The machine takes 3 minutes 30 seconds to make one item.
 Use your graph to estimate the value of n .

[2 marks]

Answer _____



27 Rearrange $x = 2y - 6$ to make y the subject.

[2 marks]



Answer _____

28 Multiply out and simplify $(x + 5)(x - 1)$

[2 marks]



Answer _____

END OF QUESTIONS

