OCR
Oxford Cambridge and RSA

Mock Test Papers-Paper1 -Test2

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) Measure the length of this line.

(a) .....cm [1]

(b) The diagram shows an angle.

(i) Measure the angle.

(b)(i) .....° [1]

(ii) Write down the mathematical name of this type of angle.

(ii) ..... [1]

2 Write down each of the following.

(a) An even number.

(a) ..... [1]

(b) A cube number.

(b) ..... [1]

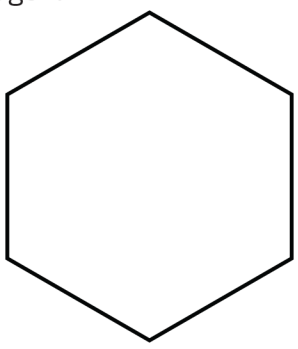
(c) A prime number between 20 and 30.

(c) ..... [1]

(d) A multiple of 5.

(d) ..... [1]

3 Here is a regular hexagon.



(a) On the diagram, draw all the lines of symmetry for the hexagon. [2]

(b) State the order of rotational symmetry of the hexagon.

(b) .....[1]

4 Here is a list of numbers.

4 8 5 7 8 2 8

(a) Work out the range of the numbers.

(a) ..... [2]

(b) Work out the mean of the numbers.

(b) ..... [2]

5 (a) Round 978 to the nearest hundred.

(a) ..... [1]

(b) Round 589236 to 3 significant figures.

(b) ..... [1]

6 Write the following numbers in order of size, smallest first.

0.934 0.98 0.89 0.908

..... , ... , ... , ...

smallest [2]

7 Solve.

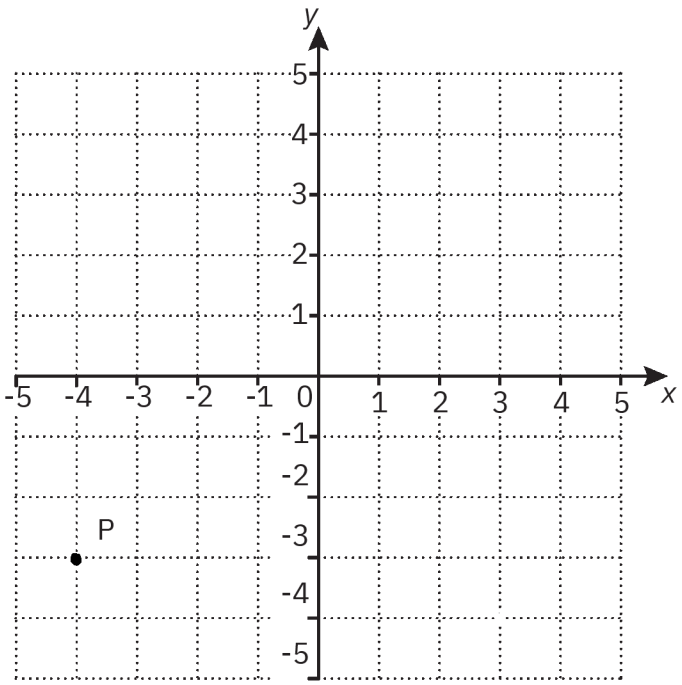
(a) $x + 9 = 39$

(a) x = ... [1]

(b) $8y - 7 = 41$

(b) y = ... [2]

8 Point P is shown on this grid.



(a) Write down the coordinates of point P.

(a) (..... , ...) [1]

(b) Plot point Q on the grid at (3, -5). [1]

9 A student thinks of a number.
They cube it and then subtract 5.
Their answer is 123.

What number is the student thinking of?

..... [2]

10 (a) Simplify.

$4p^2q \times 6q$

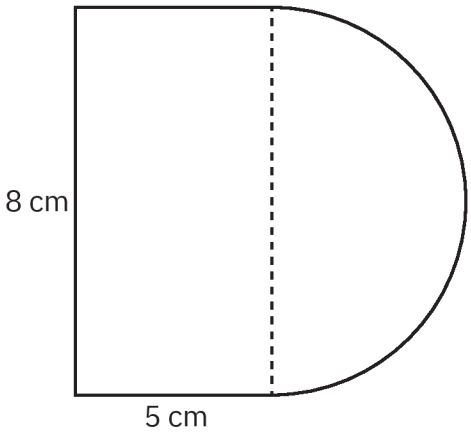
(a) ..... [2]

(b) Factorise.

$64x + 8x^2$

(b) ..... [2]

11 A rectangle, 8 cm by 5 cm, and a semi-circle are joined to make this shape.

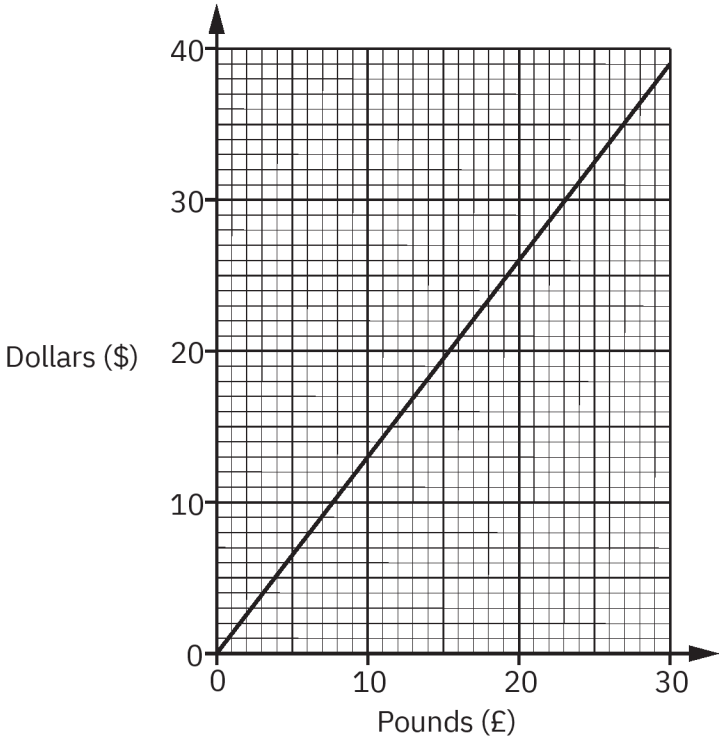


Not to scale

Work out the area of the shape.

.....cm2 [4]

12 A conversion graph between pounds (£) and dollars ($) is shown below.



(a) Explain fully how the graph shows that the number of dollars is directly proportional to the number of pounds.

.....

.....[2]

(b) Use the conversion graph to change £30 into dollars.

(b) $ ..... [1]

(c) Some shoes cost £170 in the UK.
The same shoes cost $195 in the USA.
Show that the shoes cost less in the USA.

.....
.....[4]

(d) If the shoes are brought from the USA there is an extra charge for tax and delivery.
Bob wants to pay the lowest total amount for the shoes .
Write down the maximum extra charge for tax and delivery that Bob should be willing to pay.
Give your answer in dollars.

(d) $ ..... [1]

13 A biased six-sided spinner is numbered 1, 2, 3, 4, 5, and 6.

The table below shows the probability of the spinner landing on 1, 2, and 4.

Number	1	2	3	4	5	6
Probability	0.15	0.10		0.20		

The spinner is three times more likely to land on 6 than on 3.

Complete the table. [4]

14 (a) Here are the first four terms of a sequence.

10 18 26 34

(i) Write down the next term in the sequence.

(a)(i) ..... [1]

(ii) Explain how you worked out your answer.

..... [1]

(b) The *n*th term of a different sequence is given by 5n -3.

Explain why 37 is not a term in this sequence.

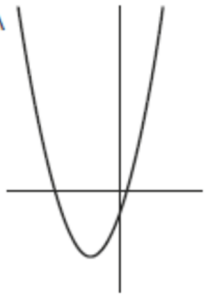
.....

.....[2]

15 Complete the table, matching each graph to its equation:

Equation	Graph
$y = 3x - 4$	
$y = 2^x$	
$y = x^3 - 2x$	
$y = x^2 + 3x - 1$	
$y = 3 - x$	

A



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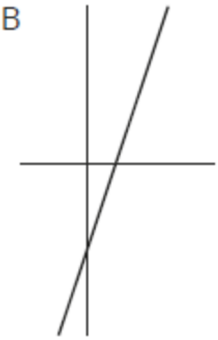

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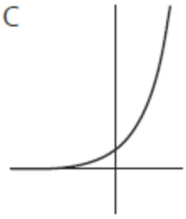

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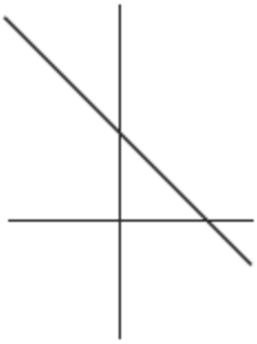
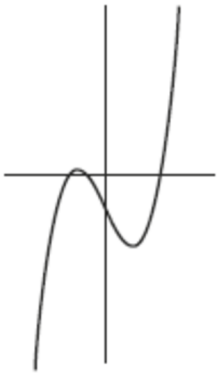


E



[4]

16 Jamie's salary is £1500 each month.

They spend $\frac{1}{3}$ of their salary on bills.

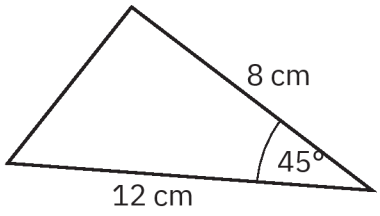
They spend £500 of their salary on groceries.

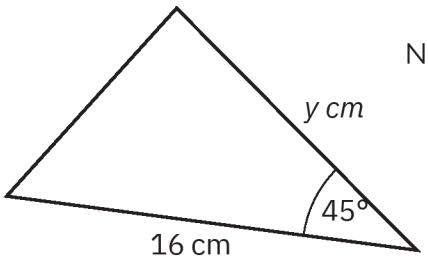
What fraction of their salary does Jamie have left?

Give your answer in its simplest form.

..... [4]

17 These two triangles are mathematically similar.





Not to scale

Work out the value of y.

y = ... [2]

18 Emma rolls two fair six-sided dice, each numbered 1, 2, 3, 4, 5, and 6.
Emma adds together the two numbers that the dice land on to produce a score.
Find the probability that Emma's score is an even number.

..... [4]

19 (a) A bakery opens every 45 minutes to serve fresh bread.
A coffee shop opens every 60 minutes for new brews.
They both open together at 09:00.
Find the next time they open together.

(a) ..... [4]

(b) A sports club has 36 members in the basketball team and 48 members in the soccer team.
The club wants to create training groups with the following rules:

- Each group must have the same number of members.
- All members in a group must be from the same sport.
- There should be as few groups as possible.

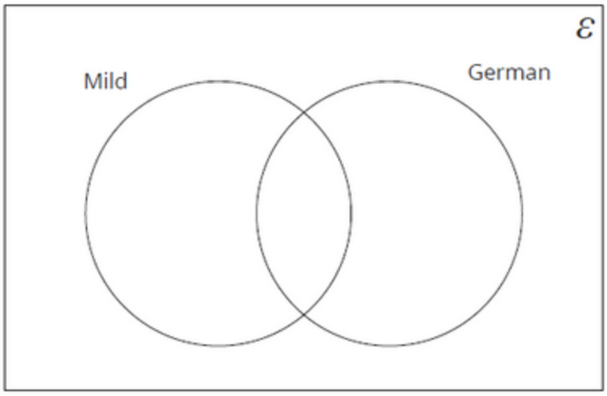
Find the size of each group and the total number of groups.

Size of each group = ...

Total number of groups = ...[4]

20 Ben gets 38 different jars of mustard for his birthday.
7 of them are German.
He tastes them all after breakfast and says that 15 of them are mild.
3 of the German mustards are mild.

(a) Complete the Venn diagram to show this information.



[2]

(b) Ben picks a jar at random.

What is the probability that the jar he picks will be mild or German or both?

.....[2]

(c) If Ben picks a jar at random from his mild jars,
what is the probability that the jar he picks will be German?

..... [1]

21 The scale on a map is 1 : 100,000.
How many kilometres on the ground are represented by 12 cm on the map?

..... [3]

22 The price of a smartphone is increased by 20% to £720.

Find the original price of the smartphone.

£ ..... [3]

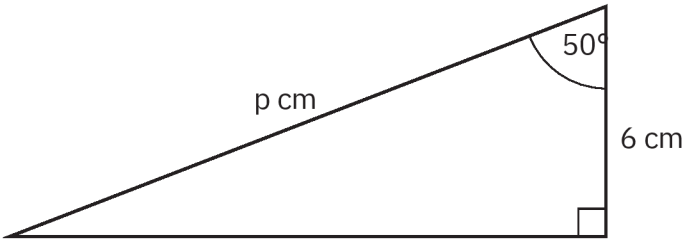
23 Emily is paid £10.50 per hour for the first 40 hours she works each week.
After 40 hours, she is paid 1.5 times the hourly rate.

Last week, Emily worked for 45 hours.
She was also paid a bonus of $\frac{1}{8}$ of her earnings for that week.

Calculate how much Emily was paid in total last week.

£ ..... [5]

24 Here is a right-angled triangle.



Not to scale

Work out the value of *p*.

p = ... [3]

25 Sophie invests £5,000 at a rate of 1.2% per year compound interest.
Calculate the total amount of interest Sophie will have earned after 3 years.
Give your answer correct to the nearest penny.

£ ..... [4]

26 Alex and Jordan travel the same distance from city X to city Y.

Alex travels at an average speed of 60 kilometres per hour (km/h).
Jordan travels at an average speed of 20 metres per second (m/s).

The journey takes Alex 3 hours.

Calculate how long the journey takes Jordan.
Give your answer in hours and minutes, correct to the nearest minute.

You must show your working.

..... hours ..... minutes [6]

END OF QUESTION PAPER