

Mock Test Papers-Paper1 -Test3

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 ink Do not write in the barcodes.

Centre number

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Candidate number

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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 π button on your calculator or take π to be 3.142 unless the question says something different.

INFORMATION

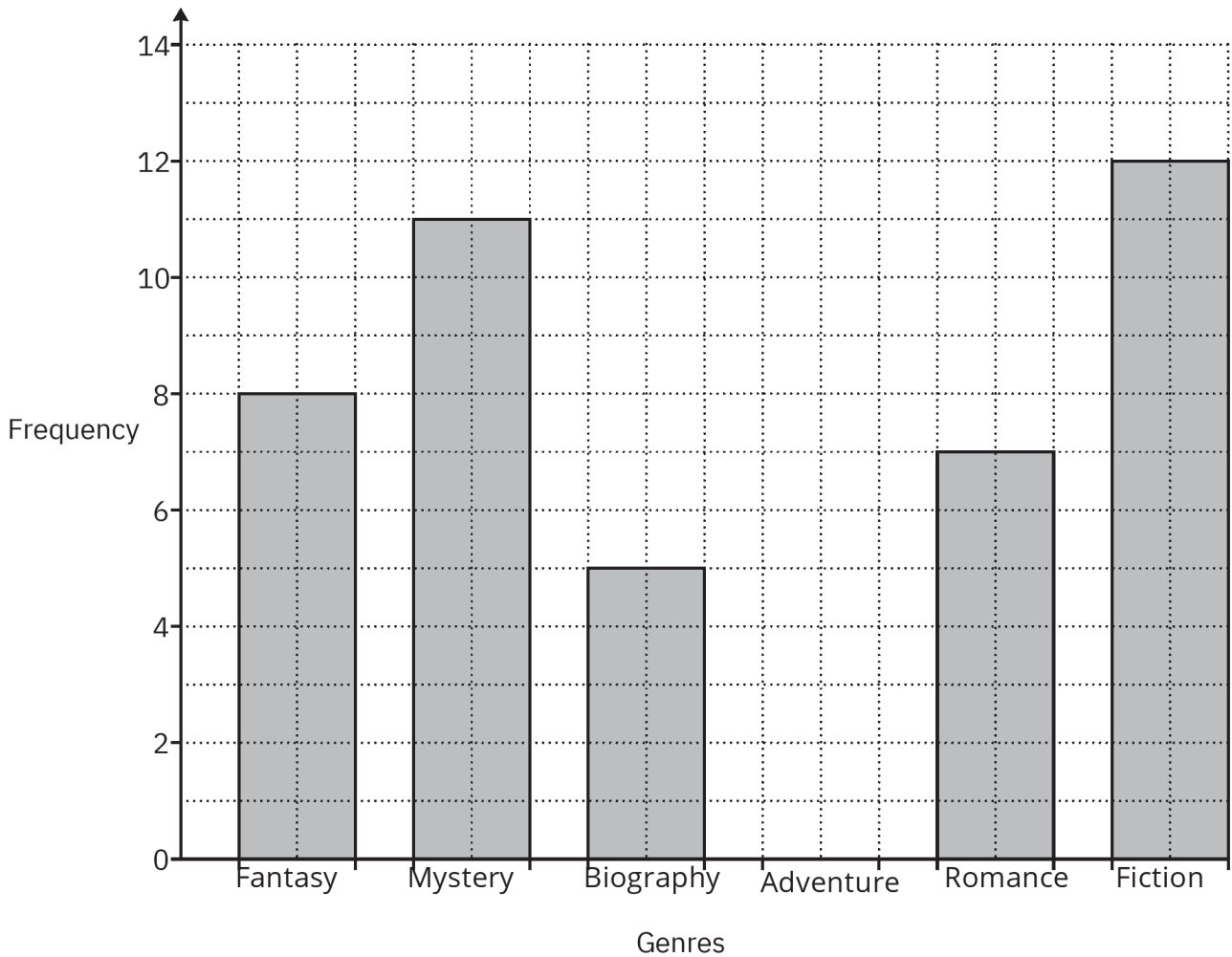
- The total mark for this paper is 100.
- The marks for each question are shown in brackets [].

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

Turn over

Answer all the questions.

- 1 Zara asked some classmates about their favorite type of book. The bar chart below shows some of her results.



- (a) 12 students chose Adventure as their favorite genre.

Complete the bar chart to show this information.

[1]

- (b) Complete these sentences.

(i) was chosen by the most students.

[1]

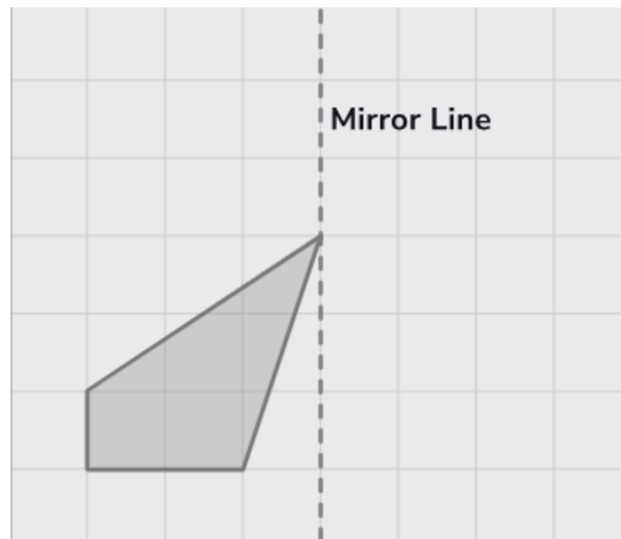
(ii) students chose Biography.

[1]

(iii) fewer students chose Fiction than Fantasy.

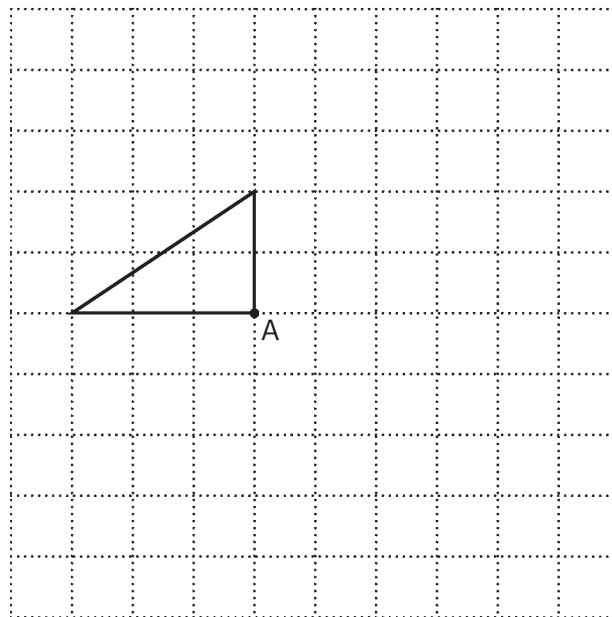
[1]

- 2 (a) Reflect the shaded shape in the mirror line.



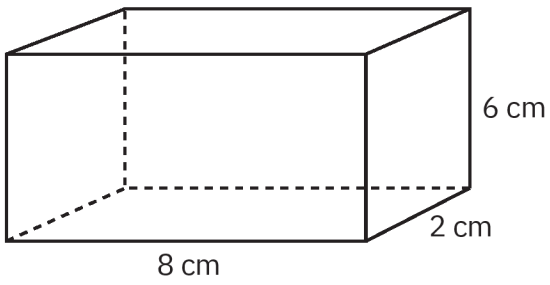
[2]

- (b) Rotate the triangle 90° clockwise about the point A.



[2]

3 Work out the volume of this cuboid.



..... cm³ [2]

4 (a) Write 4% as a decimal.

(a) [1]

(b) Write $\frac{35}{40}$ as a percentage.

(b)% [1]

5 Use one of the symbols $<$, $=$ or $>$ to make each statement true.

(a) 0.9 $\frac{7}{5}$ [1]

(b) 19.76 19.51 [1]

- 6 A box contains 20 marbles.
8 are green, 7 are white, and 5 are black.
A marble is taken from the box at random.

Mark with an arrow (\downarrow) the probability the marble is :

- (a) green,



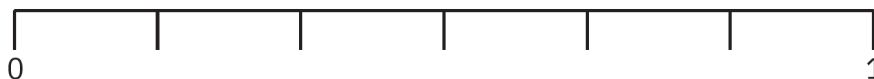
[1]

- (b) black ,



[1]

- (c) red.



[1]

Turn over

7 (a) Divide 90 in the ratio 2 : 3.

(a) : [2]

(b) At a concert, tickets were sold to adults and children in the ratio 5 : 9.
If 45 tickets were sold to children, work out the number of tickets sold to adults.

(b) [2]

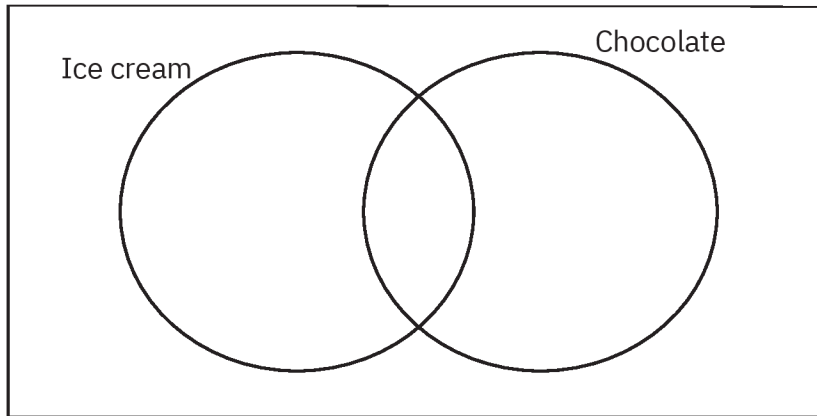
8 Boxes of pencils are packed in cartons.
Each carton holds 15 boxes of pencils.
What is the smallest number of cartons needed to pack 520 boxes of pencils?

..... [2]

9 A group of 40 children were asked whether they like ice cream, chocolate or both.

- 14 children like ice cream.
- 16 children like chocolate.
- 10 children like both.

(a) Show this information on the Venn diagram.



[1]

(b) (i) How many children do not like either ice cream or chocolate?

(b)(i) [1]

(ii) Write your answer in the correct place on the Venn diagram. [1]

(c) If a child is chosen at random from the group,
what is the probability that they like both ice cream and chocolate?

(c) [2]

Turn over

- 10 Leo thinks of a number.
He triples the number and then subtracts 7.
His answer is 50.
What number is he thinking of?

..... [2]

- 11 The scale on a map is 1 : 25,000.

How many kilometers on the ground are represented by 10 cm on the map?

..... km [3]

- 12 (a) A car is moving with a velocity of 20 m/s.
It then accelerates at 0.8 m/s^2 for 5 seconds.
Use the formula $v=u+at$ to calculate the velocity of the car after 5 seconds.

(a) m / s [2]

- (b) Rearrange the formula $v = u + at$ to make t the subject.

(b) [2]

Turn over

13 Choose a word from this list that best describes each statement.

Identity Expression Formula Term Equation

(a) $x + y = 12$ (a) [1]

(b) $7y - 4$ (b) [1]

(c) $(a + b)^2 = a^2 + b^2 + 2ab$ (c) [1]

14 Emma is paid £9.20 per hour for the first 25 hours she works each week.

For any additional hours, she is paid 1.5 times her hourly rate.

Last week, Emma worked for 28 hours.

She also received a bonus of 8% of her total earnings for that week.

Calculate how much Emma was paid in total last week.

£ [6]

15 (a) Solve.

$$\frac{x}{4} + 7 = 57$$

(a) $x = \dots\dots\dots$ [2]

(b) Factorise.

$$6a^2 + 60a$$

(b) $\dots\dots\dots$ [2]

(c) Solve by factorising.

$$x^2 + 10x + 25 = 0$$

(c) $x = \dots\dots\dots$ or $x = \dots\dots\dots$ [3]

16 The length, l , of a room is 5.6 meters, correct to 1 decimal place.

Complete the error interval for the length, l .

$\dots\dots\dots \leq l < \dots\dots\dots$ [2]

Turn over

17 The table below shows the populations of some countries.

Country	Population
Brazil	2.1×10^8
Italy	6.0×10^7
Nigeria	2.1×10^8
Sweden	1.0×10^7
Thailand	7.0×10^7

(a) Write the population of Sweden as an ordinary number.

(a) [1]

(b) How many more people live in Brazil than in Thailand?
Give your answer in standard form, correct to 2 significant figures.

(b) [4]

(c) Sarah says the population of Brazil is approximately three times the population of Italy.
Is she correct? Show how you decide.

Sarah is because
..... [2]

- 18 A triangle has sides of length 9.2 cm, 11.3 cm, and 14.5 cm.
Is this a right-angled triangle?
Show how you decide.

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

- 19 One afternoon, Lena records the types of birds visiting her garden.
She then calculates the relative frequency for each type.
Some of her results are shown in this table:

Bird Type	Sparrow	Robin	Pigeon	Magpie	Other
Relative frequency	0.20	0.15	0.25	0.30	

The following afternoon, Lena plans to record the type of the next 160 birds visiting her garden.
Calculate an estimate for the total number of birds that will be sparrows or robins.

..... [4]

Turn over

- 20 Amira is taking three examination papers in Mathematics.
Here are her first two results:

$$\text{Paper 1: } \frac{50}{80}$$

$$\text{Paper 2: } \frac{60}{80}$$

Paper 3 is out of 80.

The marks in each of the three papers are added together.

Calculate the minimum mark that Amira needs on Paper 3 to achieve 70% of the total marks.

..... [4]

21 Four workers take 3 hours to assemble 360 boxes.

Assuming each worker assembles boxes at the same rate, how long will it take six workers to assemble 540 boxes?

Give your answer in hours and minutes.

..... hours mins [4]

Turn over

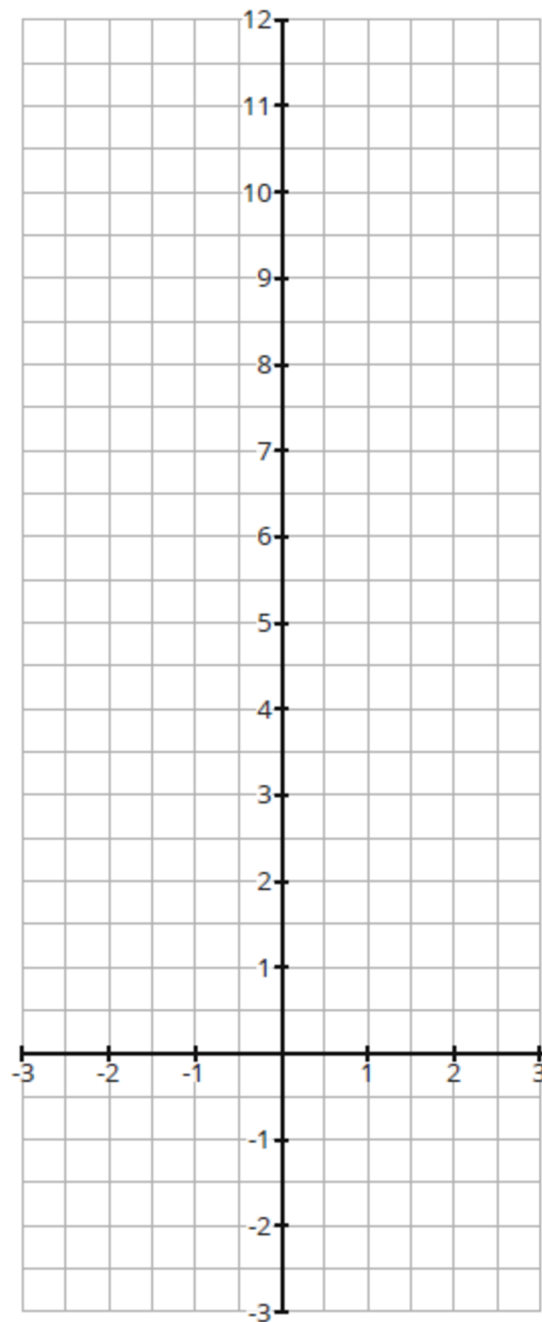
22 Complete the table of values below for $y = 2x + 5$.

(a)

x	-3	-2	-1	0	1	2	3
y		1				9	

[2]

(b) Draw the graph of $y = 2x + 5$ on the axes.



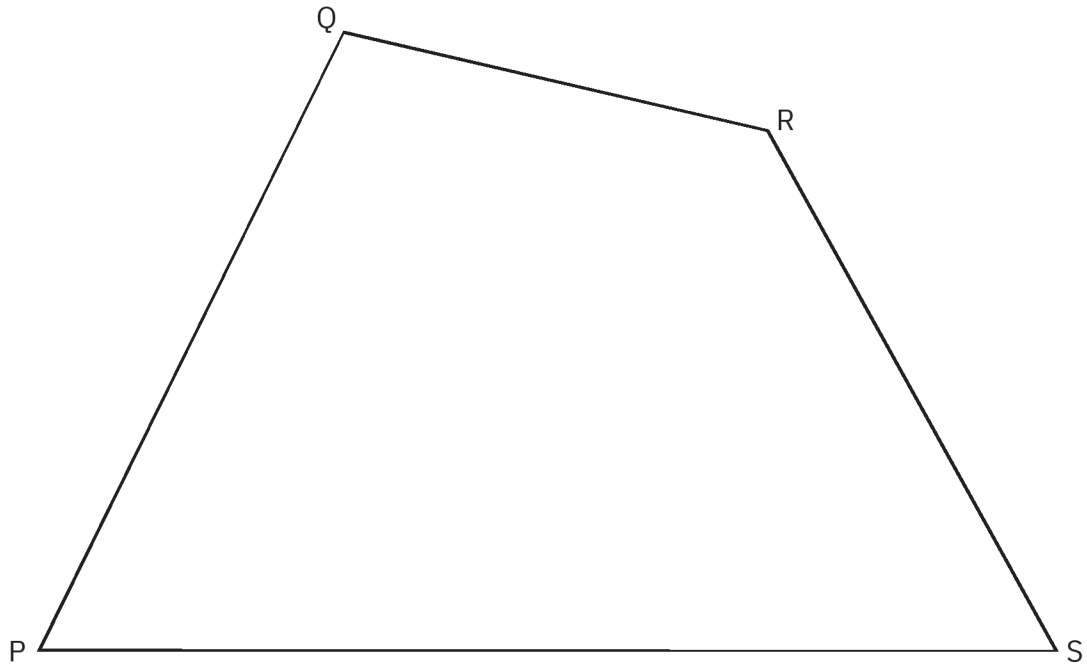
[2]

(c) Simplify $8a + 6b - 2a - 4b$

(c) [1]

Turn over

23 PQRS is a quadrilateral.



- (a) Construct the bisector of angle PQR.
Show all your construction lines. [2]
- (b) Construct the perpendicular bisector of QR.
Show all your construction lines. [2]
- (c) Shade the region which is
- closer to QR than to PQ
 - and
 - closer to Q than to R.

[1]

24 James has a job.

On Friday, he is paid £5.50 per hour.

On Saturday, he is paid $1\frac{1}{2}$ times that rate.

He works for 3 hours on Friday.

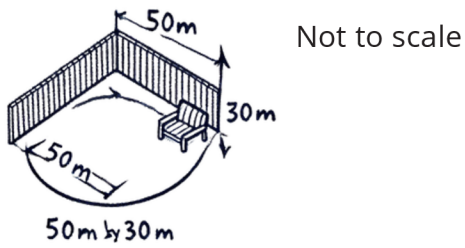
He works from 10 am until 1 pm on Saturday.

How much does James earn in total for these two days?

£..... [6]

Turn over

25 The diagram shows Eeshu's backyard patio.



It is shaped like a rectangle that is 50 meters long and 30 meters wide.
On one of the shorter sides, there is a half-circle.

Eeshu wants to cover the entire patio with gravel.

He needs 45 grams of gravel for every square meter of the patio.

The gravel comes in bags that weigh 15 kilograms each, and each bag costs £22.40.

Calculate the total cost for Eeshu to buy enough bags of gravel to cover her patio.

Make sure to show all your calculations!

£ [6]

END OF QUESTION PAPER