



THIRD SPACE
LEARNING

Mathematics

Paper 1

(Calculator)

Foundation Tier

OCR GCSE

SET 1A

Mathematics Paper 1 (Calculator) Foundation Tier Edexcel

OCR SET 1A

Name

Total marks



Paper length: 1hr 30mins

Instructions

- Use black ink or ball-point pen.
- Fill in the boxes at the top of this page with your name,
- centre number and candidate number.
- Answer all questions.
- Answer the questions in the spaces provided
 - there may be more space than you need.
- You must show all your working.
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- Calculators may not be used.

Information

- The total mark for this paper is 80
- The marks for each question are shown in brackets
 - use this as a guide as to how much time to spend on each question.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

This practice paper is based on the topics from the **advanced information for the Summer 2022 exam series**.

Please note, this practice paper is an example to help revision, these topics can be tested in other ways and other topics may be included in the actual papers

1 (a) Round 357 to the nearest 10.

(a) [1]

(b) Round 42.39 to the nearest whole number.

(b) [1]

(c) Round 126.5531 to 1 decimal place.

(c) [1]

2 Here are some numbers:

15 5 11 12 8 1

(a) Write down a number that is a multiple of 3 and a multiple of 4.

(a) [1]

(b) Write down two prime numbers.

(b) and [2]

(c) Fill in the boxes using the numbers above to make the answer to this calculation as small as possible:

$$\boxed{} - \boxed{} = \boxed{}$$

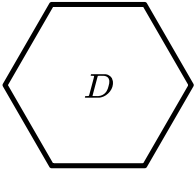
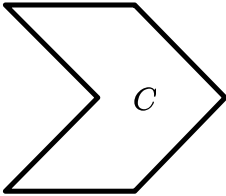
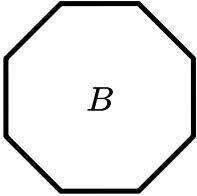
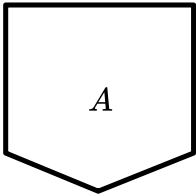
[2]

(d) Lily says that 2 is the only even prime number. Is Lily correct? Explain how you know.

.....
.....

[2]

3 Here are some polygons.



Complete the table:

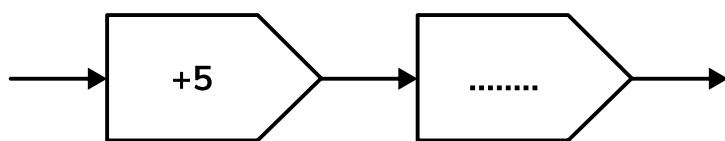
	Regular/irregular	Name of polygon
<i>A</i>		Pentagon
<i>B</i>		Octagon
<i>C</i>	Irregular	
<i>D</i>	Regular	

[4]

4 The product of three numbers is 648. Two of the numbers 6 and 9. What is the third number?

The third number is [2]

5 Here is a function machine.



Melody records some inputs and outputs in a table:

Input	Output
3	16
5	20
10	30

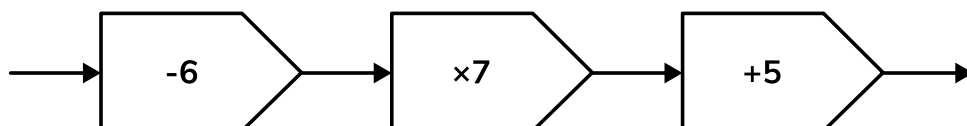
(a) What operation occurs in the second part of the function machine?

(a) [1]

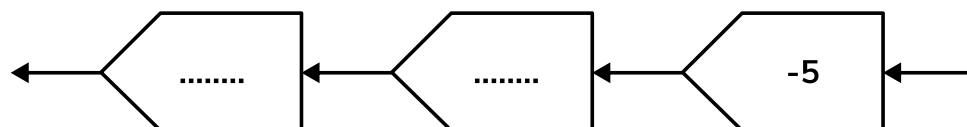
(b) Melody tries another input. The output is 24. What number did Melody input?

(b) [2]

(c) Here is another function machine:



Fill in the missing inverse operations:



[2]

- 6 Ricky earns £10 per hour. He records the number of hours he works in the table below:

Day	Hours
Monday	5
Tuesday	3
Thursday	6.5
Saturday	3.5

- (a) How much does Ricky earn this week?

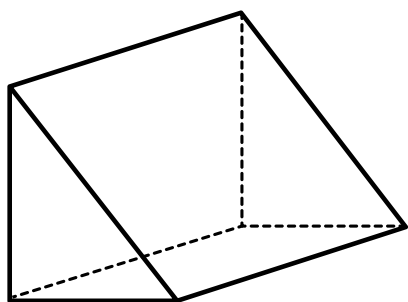
£ [2]

- (b) The following week Ricky earns £200.

Of the £200, he spends 32% on clothes and $\frac{3}{16}$ on a game for his games console. Ricky wants to buy a tablet costing £100. Does Ricky have enough money left? Show how you decide.

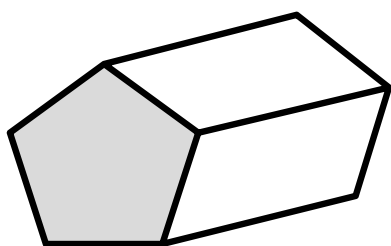
.....
.....
[3]

7 Here is a triangular prism.

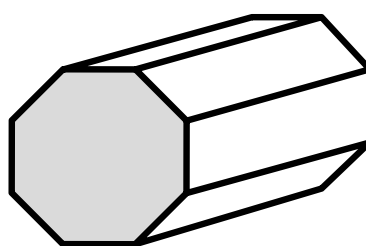


How many faces, edges and vertices does it have?

Faces Edges Vertices [3]



Pentagonal prism



Octagonal prism

Write down the number of vertices each of these shapes have.

Pentagonal prism

Octagonal prism [2]

Write down a rule linking the number of edges that the end face of a prism has and the number of vertices the prism has.

.....
.....

[1]

8 Add brackets to these calculations to make them correct:

(a) $60 - 12 \div 6 - 4 = 4$ [1]

(b) $3 \times 4 + 2^2 - 4 = 104$ [1]

9 (a) Simplify $7a + 5b - 3a + 4b$

(a) [1]

(b) Solve the equation $4(p + 7) = 42$

(b) $p =$ [2]

(c) Factorise $6x^2 - 9x$

(c) [2]

10 Write these numbers in ascending order:

0.77 $\frac{4}{5}$ 72% $\frac{3}{4}$

..... [2]

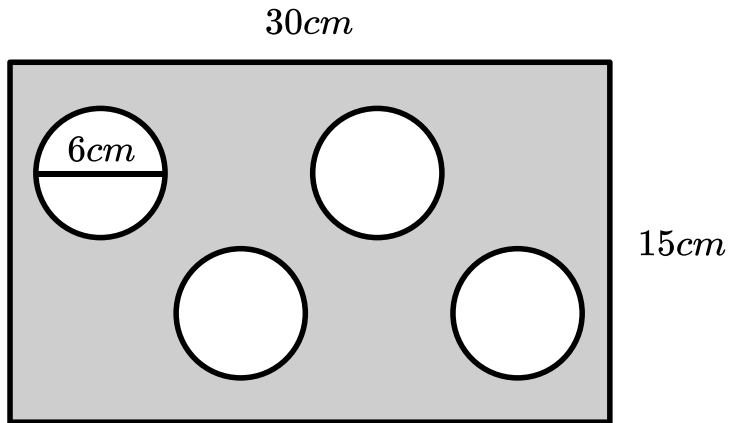
11 A shop sells apples and oranges in the ratio 5:2.

It sells apples for 30p and oranges for 40p.

If the shop sells 35 pieces of fruit altogether, how much money does the shop receive? Give your answer in pounds and pence.

£ [4]

- 12** Four identical circles are cut out from a rectangle.



Work out the shaded area. Give your answer to the nearest whole number.

..... cm^2 [4]

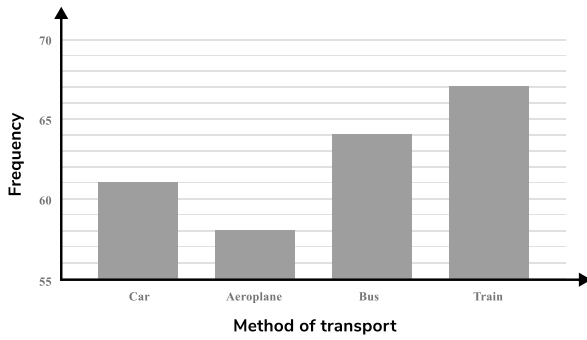
- 13** (a) Write the number 4 720 000 in standard form.

(a) [1]

(b) Write 7.1×10^{-3} as an ordinary number.

(b) [1]

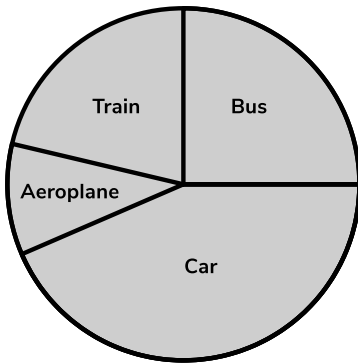
14 Lesley has drawn a bar chart to show the method of transport that a number of tourists used to get to London.



(a) Explain why Lesley's graph is misleading.

[1]

(b) Ffion drew a pie chart to show the method of transport a different group of tourists used to get to Cardiff.



Tick the box that describes the information given:

☐

More people
arrived by train
in London

☐

More people
arrived by train
in Cardiff

☐

Not enough information
to decide in which city
more people arrived by
train

[1]

15 Use your calculator to work out $\frac{\sqrt{25} + 6}{7 - 3.8}$

[2]

16 Solve the inequality $3(2y - 4) < 2(y + 5)$

----- [3]

17 $\mathbf{a} = \begin{pmatrix} 3 \\ -4 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} -2 \\ -7 \end{pmatrix}$

(a) Circle the vector that is parallel to vector **a**.

$$\begin{pmatrix} -3 \\ -4 \end{pmatrix} \quad \begin{pmatrix} 12 \\ -16 \end{pmatrix} \quad \begin{pmatrix} 3 \\ 4 \end{pmatrix} \quad \begin{pmatrix} -12 \\ -16 \end{pmatrix}$$

[1]

Write $\mathbf{a} - 2\mathbf{b}$ as a column vector.

----- [2]

18 On Saturday, 250 people go to the cinema.

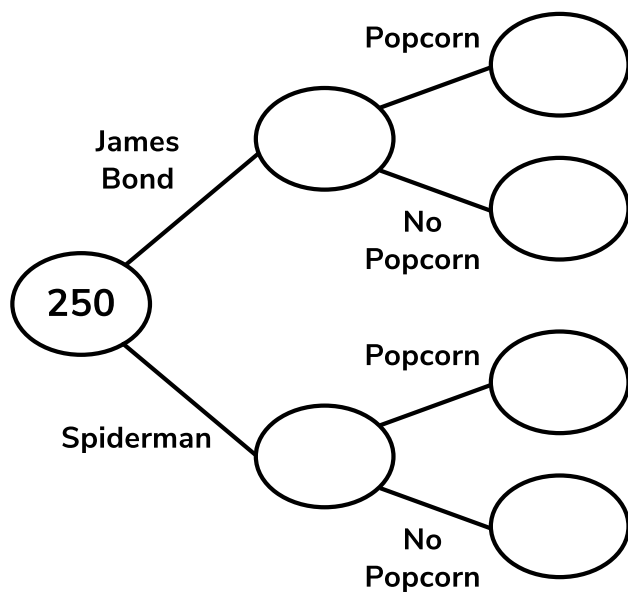
There were two films shown on Saturday: James Bond and Spiderman.
Tickets were sold with or without popcorn.

120 people watched James Bond.

Of those who watched James Bond, 35% bought tickets with popcorn.

140 people bought tickets without popcorn.

(a) Complete the frequency tree below.



[3]

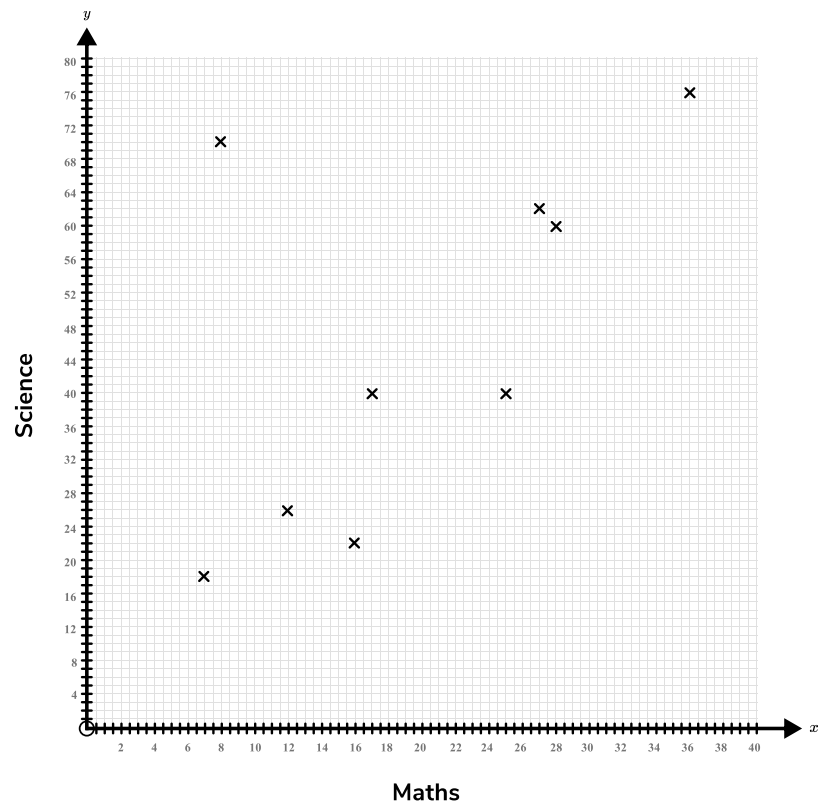
(b) What fraction of those who watched Spiderman had popcorn?

[1]

19 Class A had a maths test and a science test. The results of 12 students are shown below.

Maths	17	27	7	8	16	12	28	25	36	14	27	9
Science	40	62	18	70	22	26	60	40	76	32	56	14

The results of the first 9 students are shown on this scatter diagram:



(a) Plot the scores of the last three students on the scatter diagram. [2]

(b) i) Draw a line of best fit. [1]

ii) Circle the outlier. [1]

(c) i) Name the type of correlation shown. [1]

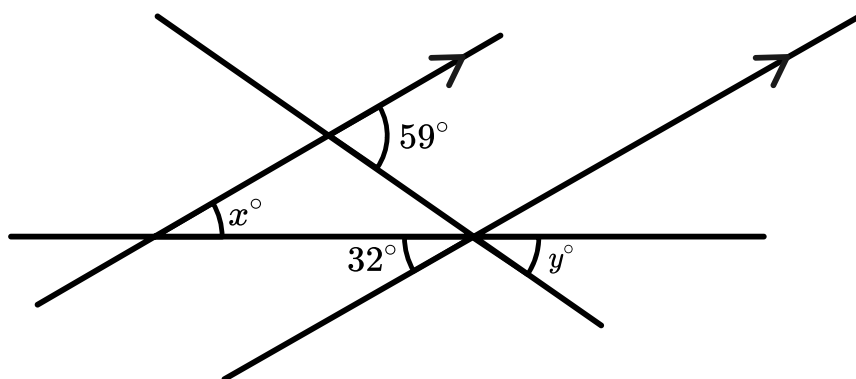
ii) Describe the relationship between the maths scores and the science scores of these children.

[1]

(d) Use your line of best fit to estimate the science score of a student who scored 34 in their maths test.

[2]

20



(a) i) Write down the size of angle x .

$x =$ [1]

ii) Give a reason for your answer.

.....
 [1]

(b) Calculate the size of angle y .

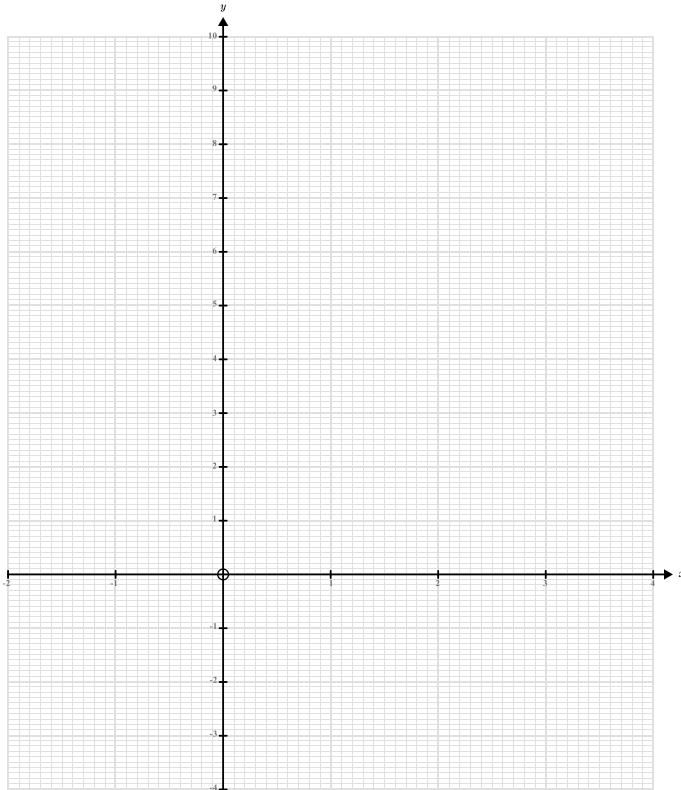
$y =$ [2]

21 (a) Complete the table of values for $y = x^2 - 2x$

x	-2	-1	0	1	2	3	4
y	8		0			3	8

[2]

(b) On the grid below, draw the graph of $y = x^2 - 2x$.



[2]

(c) Write down the solutions of the equation $x^2 - 2x = 0$.

(c) [2]

22 A furniture store is having a 20% sale.

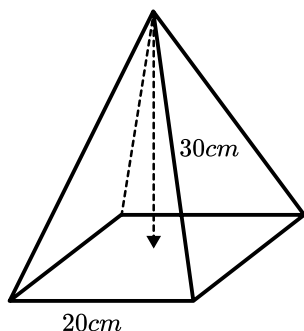
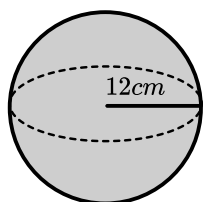
(a) A sofa usually costs £1200. Work out the sale price of the sofa.

(a) £ [2]

(b) The sale price of a table is £560. Work out the original price of the sofa.

(b) £ [2]

- 23** Here is a sphere and square based pyramid. Determine which shape has the greater volume. Explain your answer.



$$\text{Volume of sphere} = \frac{4}{3}\pi r^3 \quad \text{Volume of pyramid} = \frac{1}{3} \times \text{base area} \times h$$

[5]

- 24** (a) The length of a piece of wood is 30m to the nearest metre. What is the shortest possible length of the piece of wood?

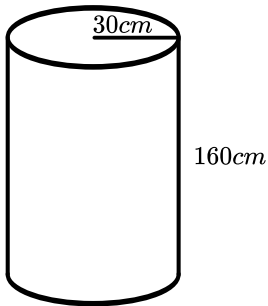
(a) m [1]

- (b) The weight of a horse is 350kg to the nearest 10kg. Complete the error interval for the mass of the horse.

(b) ≤ mass (kg) < [2]

25 A cylindrical tank is filled with water at a rate of 12 litres per minute.

Given that 1 litre = 1000cm^3 , work out how long it takes to fill the tank. Give your answer to 1 decimal place.



..... minutes **[4]**

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