



THIRD SPACE
LEARNING

Mathematics

Paper 3

(Calculator)

Foundation Tier

Edexcel GCSE

SET 2

Mathematics Paper 3 (Calculator) Foundation Tier Edexcel

GCSE SET 2

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 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.

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 Write the following numbers in order of size.

Start with the smallest number.

0.103 1.11 1.3 1.033 0.31

(Total for Question 1 is 1 mark)

- 2 Work out $\frac{1}{5}$ of 40

(Total for Question 2 is 1 mark)

- 3 What is the time 3 hours and 20 minutes after 7.15 am?

(Total for Question 3 is 1 mark)

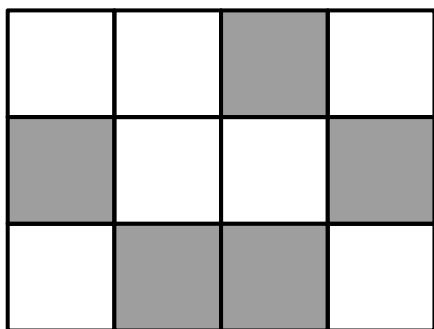
- 4 Write down a multiple of 6 that is between 20 and 35

(Total for Question 4 is 1 mark)

- 5 Write 0.8 as a percentage

(Total for Question 5 is 1 mark)

6 Here is a grid of squares.



(a) Write down the ratio of the number of shaded squares to the number of unshaded squares.

(1)

(b) Adam shades 3 more squares.

Write down the fraction of squares that are now shaded.

Give your answer in its simplest form.

(2)

(Total for Question 6 is 3 marks)

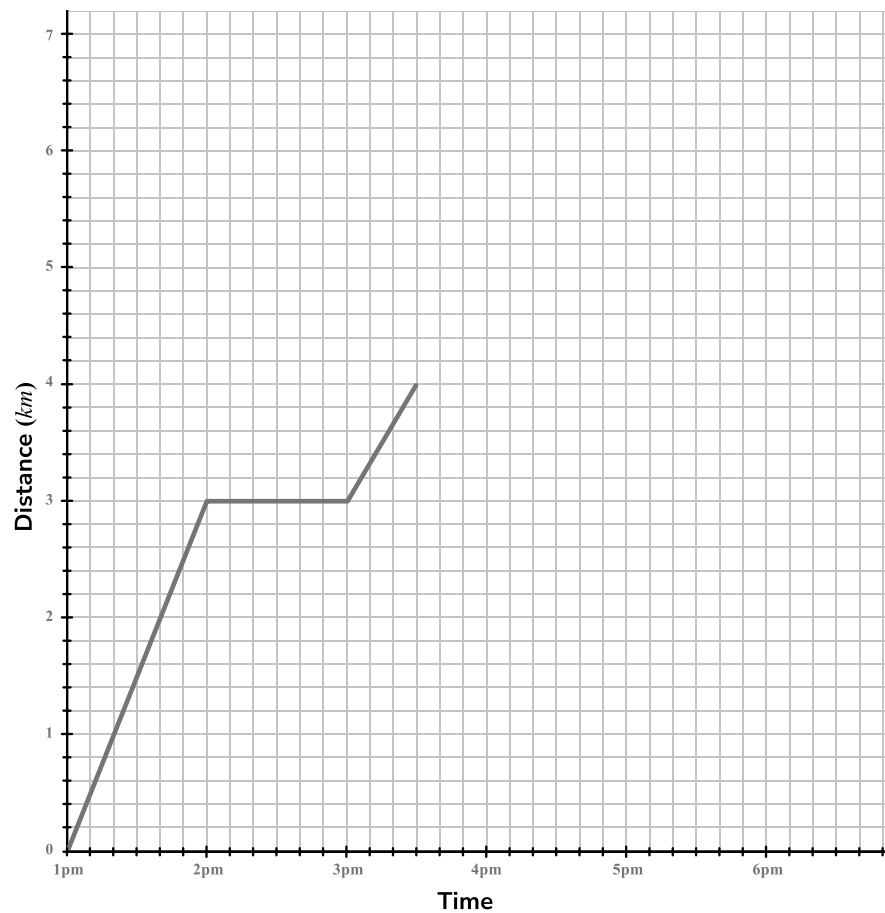
7 Here are the first four terms of a sequence.

1 4 9 16

Write down the next two terms in the sequence.

(Total for Question 7 is 2 marks)

8 Hollie walked 3km to a friend's house.
Hollie stopped at her friend’s house before walking to the post box to post a letter.
The travel graph below shows Hollie’s journey.



(a) How long did Hollie spend at her friend’s house?

(1)

(b) After posting her letter, Hollie walked straight home. It took her 1 hour and 30 minutes.
Complete the travel graph.

(2)
(Total for Question 8 is 3 marks)

9 The probability that Nathaniel is late to work is 0.2.

(a) What is the probability that Nathaniel is not late?

(1)

(b) The probability that Liv is late for work is $\frac{1}{8}$.

Who is most likely to be late for work?

You must show how you decide.

(2)

(Total for Question 9 is 3 marks)

10 A television costs £420.

(a) There is a 15% sale at the shop where the television is sold.

Work out the cost of the television in the sale.

£ -----

(2)

(b) The shop has a special promotion where all sale prices are reduced by 10%.

Show that the cost of the television on this day is £321.30.

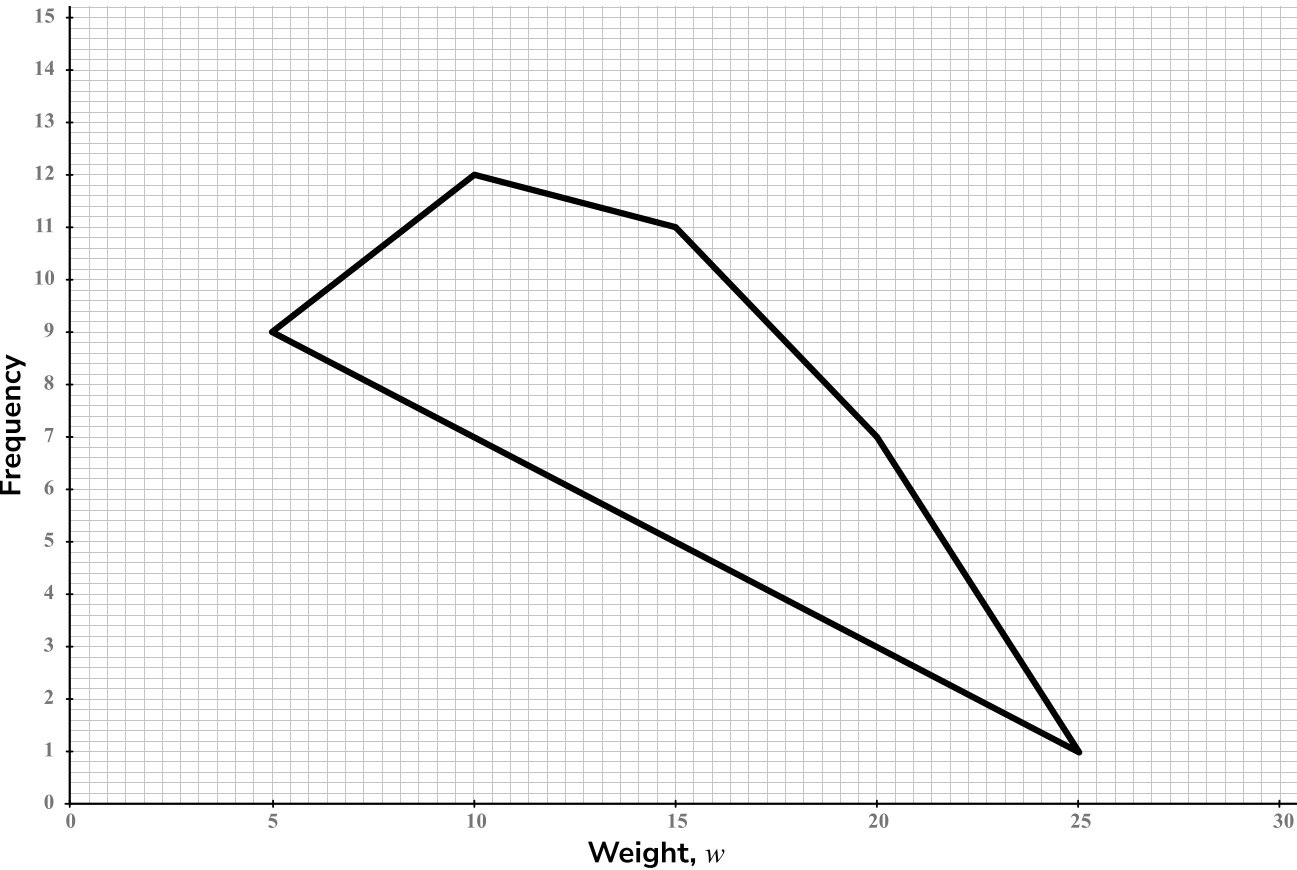
(2)

(Total for Question 10 is 4 marks)

11 The grouped frequency table gives information about the weights of 40 dogs.

| Weight, w (kg) | Frequency |
|------------------|-----------|
| $5 \leq w < 10$ | 9 |
| $10 \leq w < 15$ | 12 |
| $15 \leq w < 20$ | 11 |
| $20 \leq w < 25$ | 7 |
| $25 \leq w < 30$ | 1 |

This incorrect frequency polygon has been drawn for the information in the table.



Write down two mistakes that have been made.

1.
-
2.
-

(2)

(Total for Question 11 is 2 marks)

- 12** Alex is going to a sports camp. He needs to pick two sports from the following:

| |
|------------|
| Football |
| Rugby |
| Hockey |
| Basketball |

Write down all the possible combinations of sports Alex could choose.

(Total for Question 12 is 2 marks)

- 13** A pizza restaurant has some small blocks of cheese and some large blocks of cheese in the ratio 2:5.

Small blocks of cheese weigh 350g.

Large blocks of cheese weigh 600g.

In total there are 42 blocks of cheese.

The restaurant needs 24 *kg* of cheese. Do they have enough cheese?

Show how you decide.

(Total for Question 13 is 4 marks)

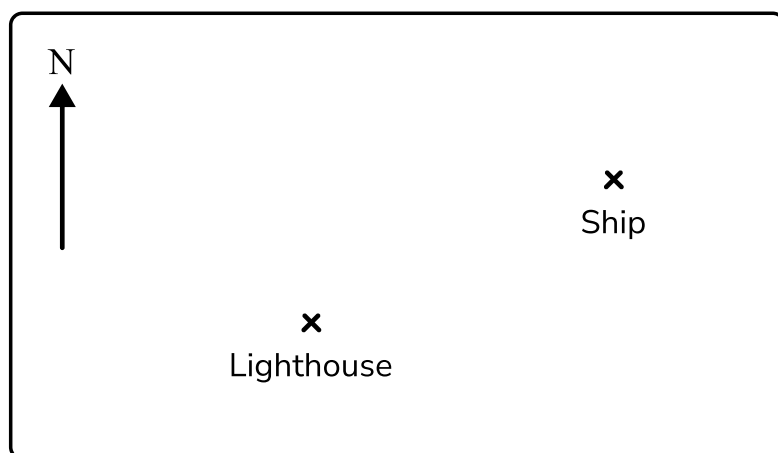
14 Fill in the boxes to make these calculations correct:

(a) 48 ÷ = -8

(b) -5 + × 2 = 3

(Total for Question 14 is 2 marks)

15 The diagram shows the position of a lighthouse and a ship.



Scale: 1 centimetre represents 20 kilometres

(a) Measure the bearing of the ship from the lighthouse.

.....
(2)

(b) Work out the actual distance of the lighthouse from the ship.

..... km
(2)

(Total for Question 15 is 4 marks)

16 (a) Write 84 as a product of its prime factors.

(2)

(b) Find the lowest common multiple of 84 and 30.

(2)

(Total for Question 16 is 4 marks)

17 (a) Factorise $12x + 18y$

(2)

(b) Solve $3(4x + 2) = 54$

(2)

(Total for Question 17 is 4 marks)

18 (a) Andy cycles from Bristol to Bath.

Andy travels 22.8km in 1 hour and 30 minutes.

Work out Andy's average speed.

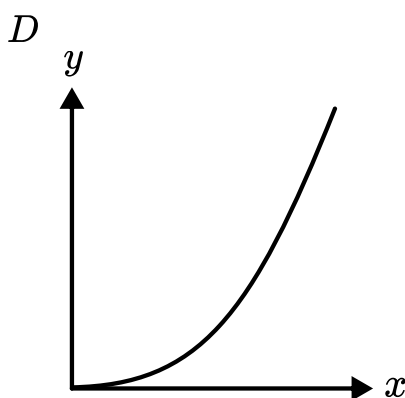
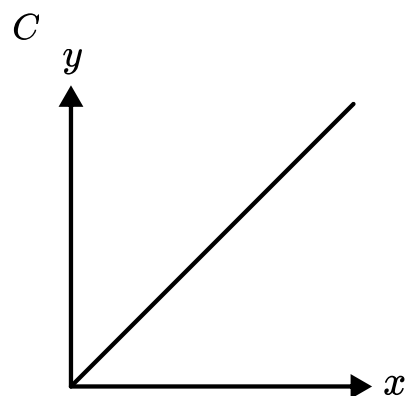
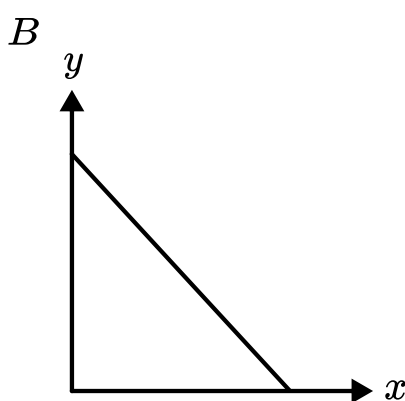
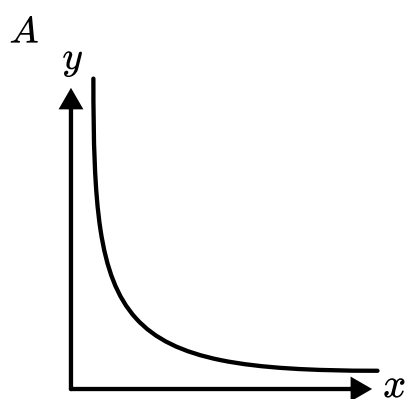
Give your answer in km/h .

----- km/h

(2)

(b) The time Andy takes to make his journey is inversely proportional to the speed at which he travels.

Which graph shows the relationship between the time taken and the speed at which Andy travels?



(1)

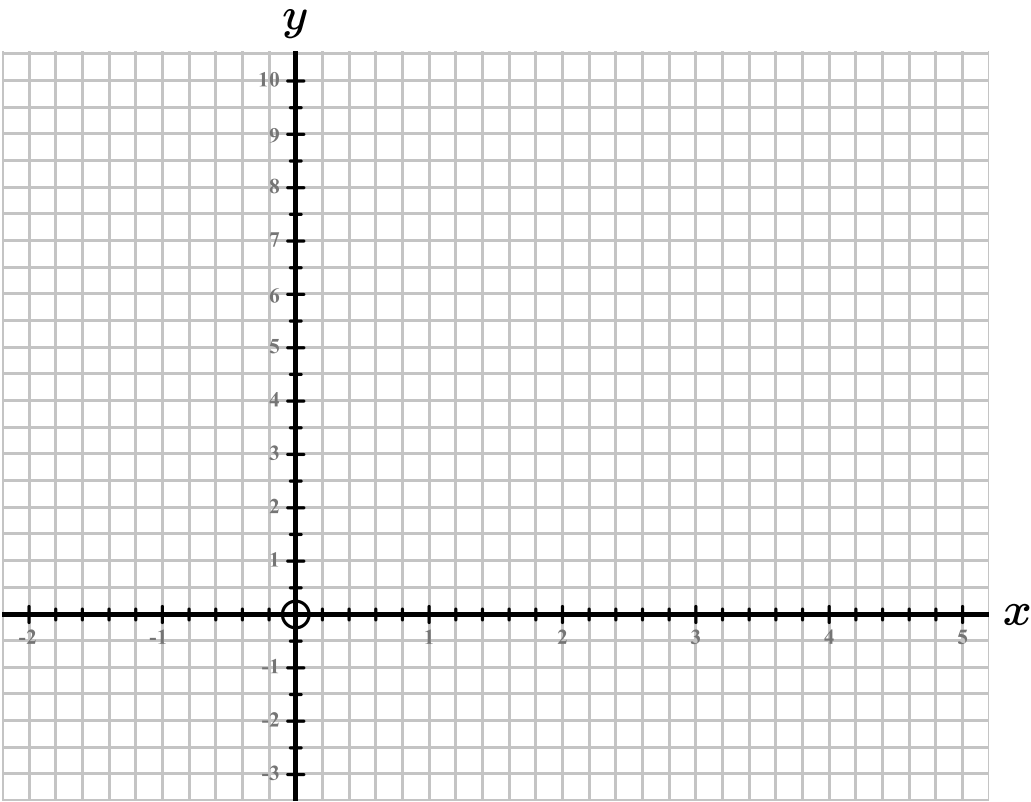
(Total for Question 18 is 3 marks)

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

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

(2)

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



(2)

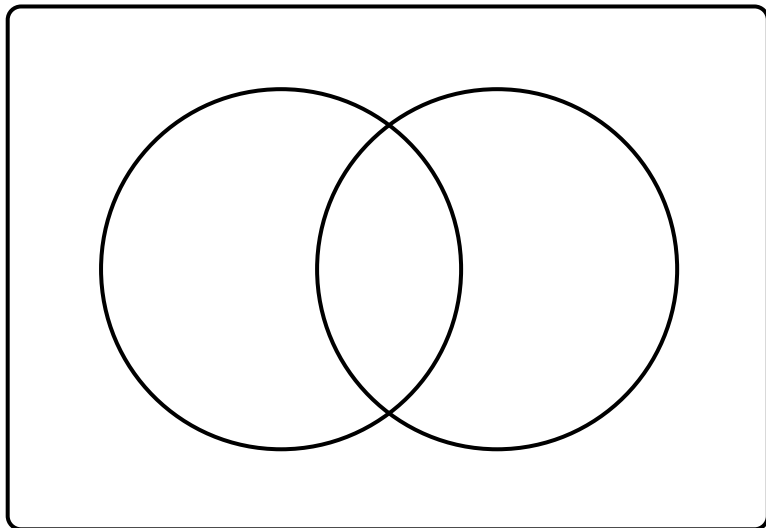
(Total for Question 19 is 4 marks)

20 $\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15\}$

$A = \{\text{factors of } 30\}$

$B = \{\text{prime numbers}\}$

Complete the Venn diagram for this information.



(Total for Question 20 is 4 marks)

21 (a) Simplify $p^3 \times p^4$

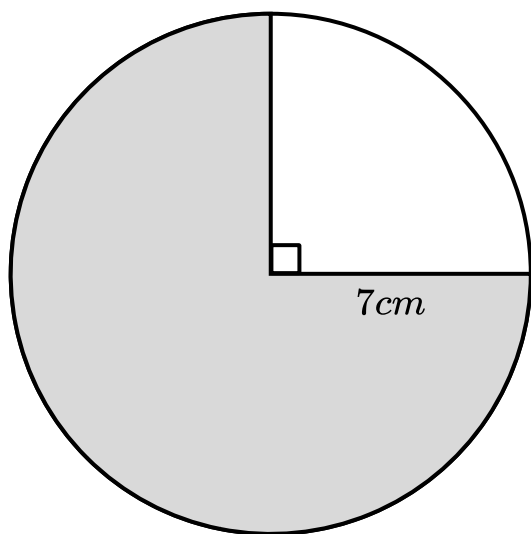
(1)

(b) Simplify $\frac{12q^7}{3q^2}$

(2)

(Total for Question 21 is 3 marks)

22 Here is a circle.



Work out the shaded area.

Give your answer to 1 decimal place.

..... cm^2

(Total for Question 22 is 3 marks)

23 A number, n , is rounded to 1 decimal place.

The result is 8.7.

Complete the error interval for n .

..... $\leq n <$

(Total for Question 23 is 2 marks)

24 Here is some information about the number of siblings that 32 children have.

| Number of siblings | Frequency |
|--------------------|-----------|
| 0 | 8 |
| 1 | 13 |
| 2 | 7 |
| 3 | 3 |
| 4 | 1 |

(a) Work out the mean number of siblings.

(3)

(b) One child is picked at random.

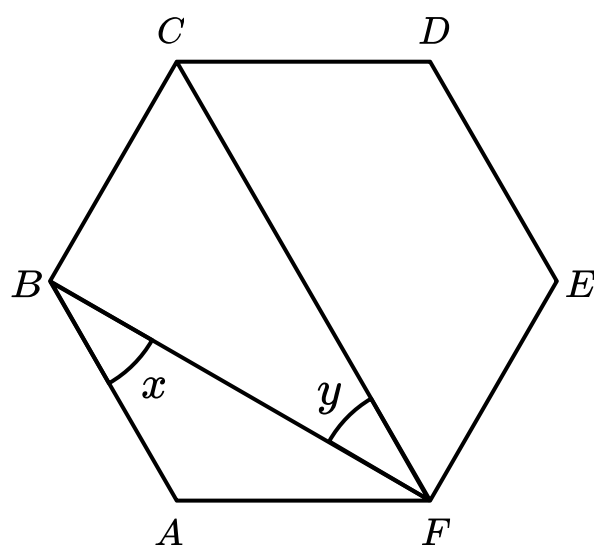
Stacy says ‘the probability that the child has at least two siblings is $\frac{5}{16}$. Is Stacy correct?

Show how you decide.

(1)

(Total for Question 24 is 4 marks)

25 Here is a regular hexagon.



- (a) Work out the size of angle x .
Give reasons for each stage of your working.

(4)

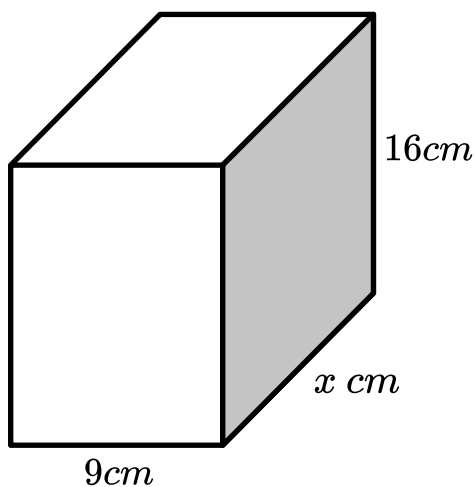
- (b) Work out the size of angle y .

(2)

(Total for Question 25 is 6 marks)

- 26 A company is designing some new packaging in the shape of a cuboid.

The packaging must have a height of 16cm , a length of 9cm and a width of $x\text{ cm}$, as shown below.



The company wants the surface area to be less than 900cm^2 .

- (a) Show that $50x + 288 < 900$

(4)

- (b) Solve $50x + 288 < 900$

(2)

- (c) The length x must be an integer. Write down the greatest possible value of x .

(1)

(Total for Question 26 is 7 marks)

27 $x = 4 \times 10^5$
 $y = 6 \times 10^3$

Work out $x + 2y$

Give your answer in standard form.

(Total for Question 27 is 2 marks)

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