

Pre Public Examination
GCSE Mathematics (Edexcel style)
March 2017
Foundation Tier
Paper 3F

Name

Class

TIME ALLOWED

1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

- Answer **all** the questions.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- **You are permitted to use a calculator in this paper.**
- Do all rough work in this book.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question on the Question Paper.
- **You are reminded of the need for clear presentation in your answers.**
- The total number of marks for this paper is **80**.

Question	Mark	Out of
1		1
2		3
3		4
4		3
5		2
6		3
7		3
8		2
9		3
10		3
11		4
12		3
13		3
14		3
15		4
16		3
17		3
18		4
19		2
20		4
21		2
22		3
23		3
24		4
25		6
26		2
Total		80

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

Question 1.

Write the following numbers in order of size.
Start with the largest number.

7.35 7.4 7.04 7.107

(Total 1 mark)

Question 2.

A scientific calculator costs £9.75.
Ben has £85 to spend.

Ben buys the maximum number of scientific calculators.
Work out how much change he should get from £85.

£

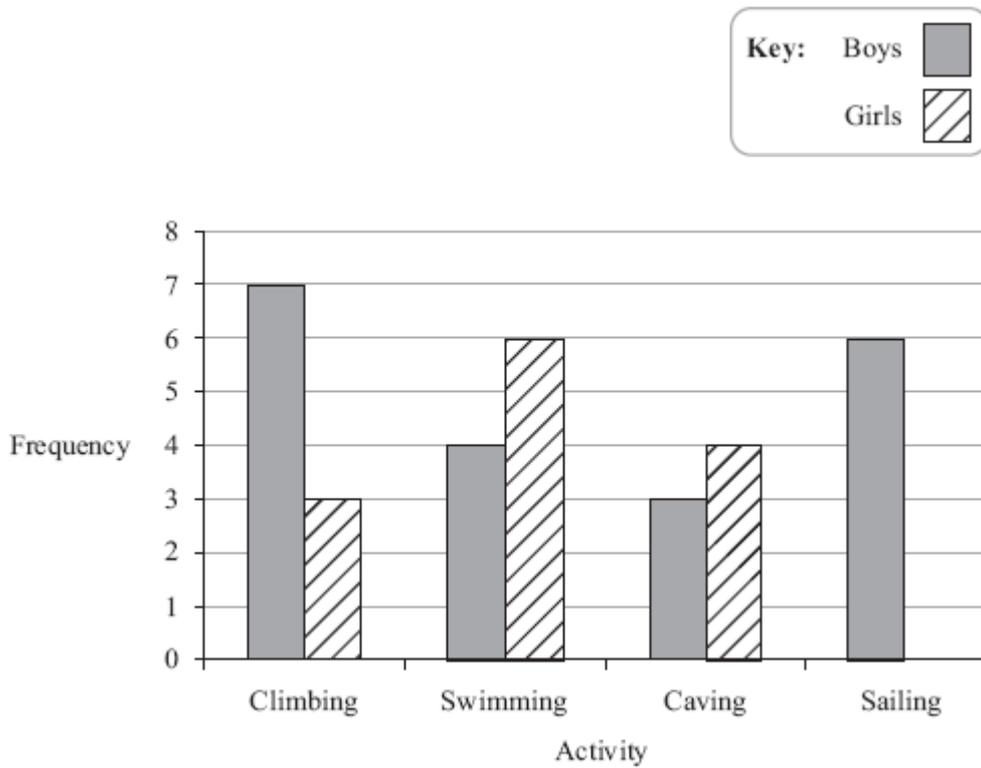
(Total 3 marks)

Question 3.

A teacher took some students on an Outdoor Activity trip.

Each student chose one activity to do.

The bar chart shows some information about the activities chosen.



(a) Which activity did most boys choose?

.....

(1)

(b) How many boys went on the Outdoor Activity trip?

.....

(2)

5 girls went sailing.

(c) Complete the bar chart.

(1)

(Total 4 marks)

Question 4.

The table shows the midday temperature on each day for eight days.

Day	1	2	3	4	5	6	7	8
Temperature (°C)	12	15	11	9	14	13	11	10

(a) Write down the mode.

..... °C
(1)

(b) Find the range of temperatures.

..... °C
(2)

(Total 3 marks)

Question 5.

Emma says,

“If you add any two different prime numbers the answer will always be an even number.”

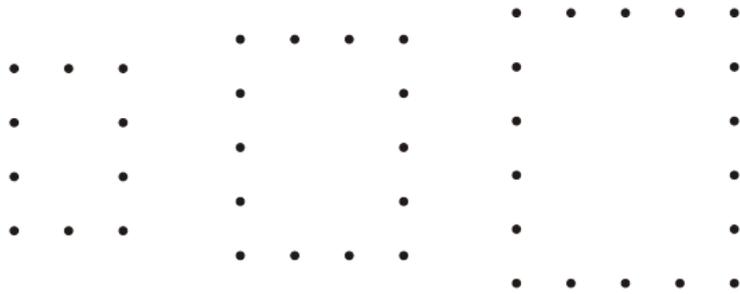
Emma is wrong.
Explain why.

.....
.....
.....

(Total 2 marks)

Question 6.

Here are some patterns made up of dots.



(a) In the space below, draw Pattern number 4.

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of dots	10	14	18		

(1)

(b) How many dots are used in Pattern number 10?

(1)

(Total 3 marks)

Question 7.

There are 185 people in a large swimming pool.

40% of the people are men.

$\frac{1}{5}$ of the people are women.

The rest of the people are children.

Work out how many children are in the swimming pool.

.....
(Total 3 marks)

Question 8.

There are 98 black marbles and 42 white marbles in a bag.

Write the ratio of the number of black marbles to the number of white marbles.
Give your ratio in its simplest form.

.....
(Total 2 marks)

Question 9.

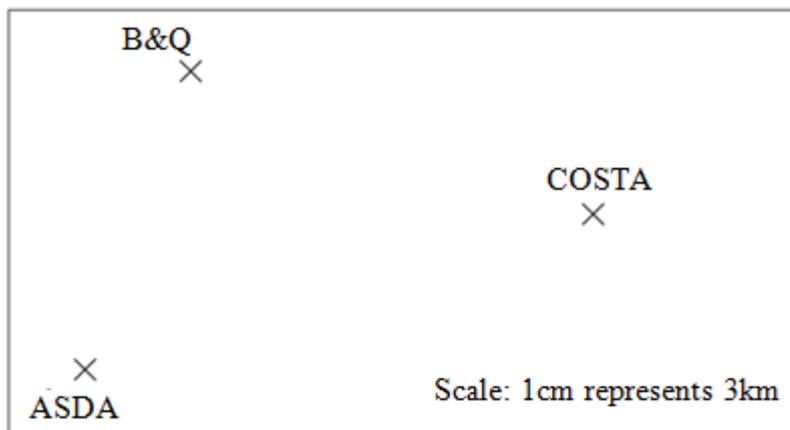
John buys twenty 1 litre water bottles from his local supermarket.
A cup holds 150 ml of water.

What is the maximum number of cups John can completely fill?

.....
(Total 3 marks)

Question 10.

This accurate scale drawing shows the positions of three stores, ASDA, B&Q and COSTA.



Jimmy walks from ASDA to Costa but stops at B&Q first.

Emily walks directly from ASDA to Costa

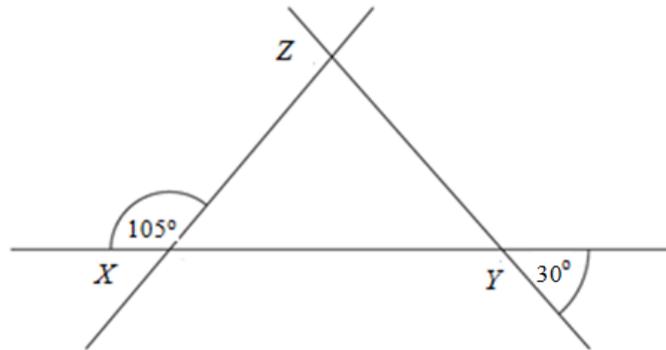
Jimmy walks more kilometres than Emily walks.

How many more?

..... km
(Total 3 marks)

Question 11.

Here is triangle XYZ with each of its sides extended.

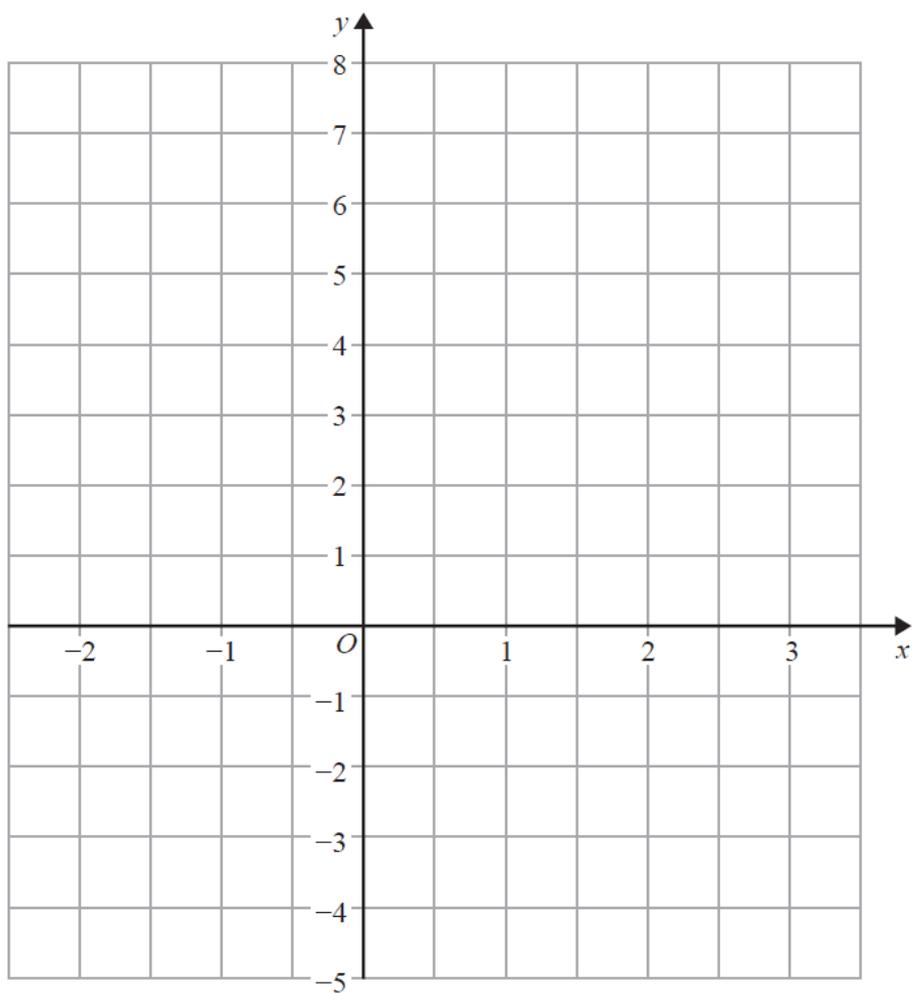


Show that triangle XYZ is isosceles.
Give a reason for each stage of your working.

(Total 4 marks)

Question 12.

On the grid, draw the graph of $y = 2x - 1$ for values of x from -2 to 3 .



(Total 3 marks)

Question 13.

Easy Wheels Driving School have released an advert.

9 out of 10 of the people we teach
pass the driving test first time

Isa talked to 64 people who had been taught to drive by the Easy Wheels.
56 of these people passed the driving test first time.

Does this support what is said in the advert?
You must show how you get your answer.

(Total 3 marks)

Question 14.

The n th term of a number sequence is $n^2 + 3$

(a) Find the first three terms of this sequence.

..... , ,
(2)

Becky says that 147 is a term of this sequence.

(b) Which term?

.....
(1)

(Total 3 marks)

Question 15.

(a) Simplify $q^3 \times q^8$

.....
(1)

(b) Simplify $\frac{h^7}{h^2}$

.....
(1)

(c) Simplify $(y^2)^5$

.....
(1)

(d) Factorise $x^2 - 16$

.....
(1)

(Total 4 marks)

Question 16.

This is a list of ingredients for making a pear & almond crumble for 4 people.

Ingredients for 4 people:

80 g plain flour

60 g ground almonds

90 g soft brown sugar

60 g butter

4 ripe pears

Danielle wants to make a pear & almond crumble for 14 people.

Here is a list of the amount of each ingredient Danielle has in her cupboard.

250g plain flour

260g ground almonds

340g soft brown sugar

200g butter

15 ripe pears

Work out which ingredients Danielle needs to buy more of.

You must show all of your working.

(Total 3 marks)

Question 17.

Trains to Slough leave Reading Station every 26 minutes.
Trains to Southall leave the same train station every 10 minutes.

A train to Slough and a train to Southall both leave the train station at 9:30 a.m.

When will a train to Slough and a train to Southall next leave the train station at the same time?

.....

(Total 3 marks)

Question 18.

Timothy, Jane and Sarah share £275.

The ratio of the amount of money Timothy gets to the amount of money Sarah gets is 1 : 5
Timothy gets £96 less than Sarah gets.

What percentage of the £275 does Jane get?
Give your answer to 3 significant figures.

..... %

(Total 4 marks)

Question 19.

Gurdeep thinks that $(y + 7)^2 = y^2 + 49$ for all values of y .

Is Gurdeep right?

You must show how you get your answer.

(Total 2 marks)

Question 20.

The table gives information about the speeds of 85 motorbikes on a road.

Speed (s) (km/h)	Frequency		
$30 \leq s < 40$	9		
$40 \leq s < 50$	25		
$50 \leq s < 60$	34		
$60 \leq s < 70$	17		

Work out an estimate for the mean speed.

..... km/hr

(Total 4 marks)

Question 21.

The Rail Company increased all prices of train tickets by 2 %.
The cost of a return ticket from Birmingham to Banbury increased by £1.20.

Work out the price of the ticket before the increase.

£

(Total 2 marks)

Question 22.

(a) Write 476 00000 in standard form.

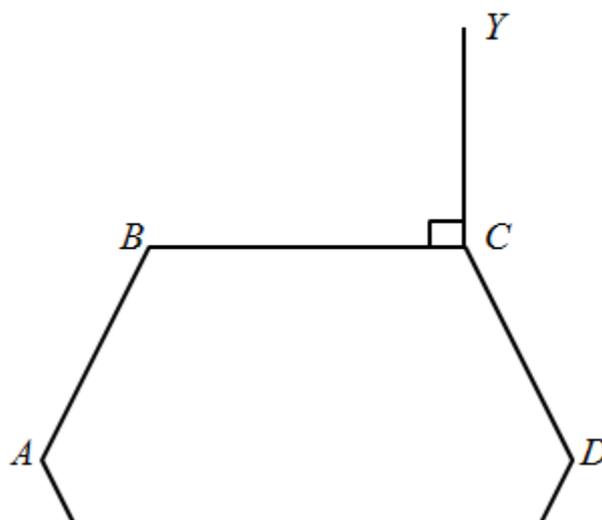
.....
(1)

(b) Work out $(2.6 \times 10^{-5}) \times (3.71 \times 10^{-2})$
Give your answer as an ordinary number correct to 3 significant figures.

.....
(2)

(Total 3 marks)

Question 23.



A , B , C and D are four vertices of a regular hexagon.
Angle $BCY = 90^\circ$.

Work out the size of angle DCY .
You must show how you get your answer.

.....^o

(Total 3 marks)

Question 24.

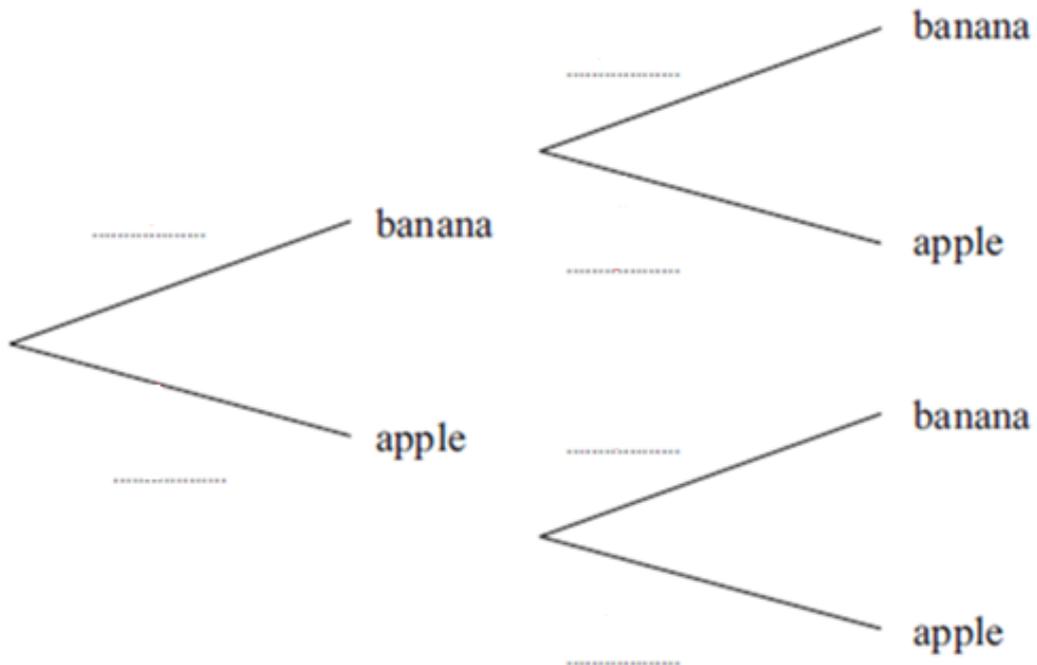
There are 5 banana smoothies and 4 apple smoothies in a box.

Mostafa takes 'at random' one smoothie from the box.

He writes down its flavour, and puts it back in the box.

Mostafa then takes 'at random' a second smoothie from the box.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that both smoothies are apple flavour.

(2)

(Total 4 marks)

Question 25.

The diagram shows the floor plan of Olivia's dining room.

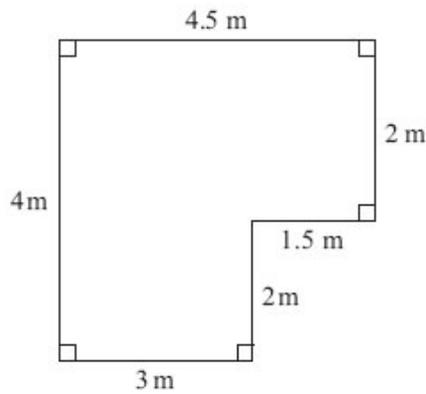


Diagram **NOT** accurately drawn

Olivia is going to cover the floor with wooden floorboards.

The floorboards are sold in packs.

A pack of floorboards costs £14.60 and will cover 2.25 m^2 of floor.

(a) Work out the cost of buying enough floorboards to cover the dining room.

£

(5)

Olivia finds out that a pack of floorboards will cover more than 2.25 m^2 of floor.

(b) Explain how this might affect the number of packs she needs to buy.

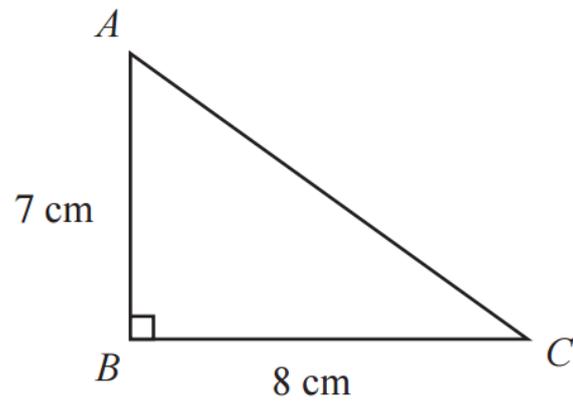
.....
.....

(1)

(Total 6 marks)

Question 26.

ABC is a right-angled triangle.



Work out the size of angle BAC .
Give your answer correct to 3 significant figures.

.....°

(Total 2 marks)

TOTAL FOR PAPER IS 80 MARKS