OCR Practice GCSE Examination Paper Foundation Set 10 Paper 3 Calculator	**Time:** 1 hour 30 minutes	Set 10 of 10
	Standard equipment: pen, pencil, ruler, protractor, compasses, calculator. **You may use a calculator.**	
Instructions to candidates: Do **not** write on this paper. You must show all of your working. Write all answers on separate paper, except where instructed to answer in your ***work booklet***. *In an examination you will normally be required to write your answers in the spaces provided in the question paper.*		

1. (a) Write the following numbers in order of size. Start with the smallest.

0.7 0.77 1 1.71 1.21

(1)

(b) Find two prime numbers which add to make 32. *(2)*

Total 3 Marks

2. (a) Round 9.589 to 1 decimal place. *(1)*

(b) Round 569.742 to 4 significant figures. *(1)*

(c) The amount of flour, f, a baker uses every day is measured to be 25 kg, correct to the nearest kg.

Using inequality notation, $a \leq f < b$, show the range of potential values of f.

(2)

Total 4 Marks

3. Write

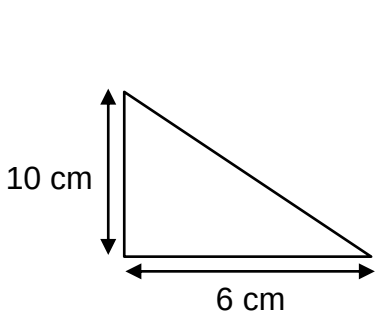
(a) 0.75 as a percentage. *(1)*

(b) $\frac{1}{4}$ as a percentage. *(1)*

(c) $\frac{3}{8}$ as a percentage. *(1)*

Total 3 Marks

4. (a)



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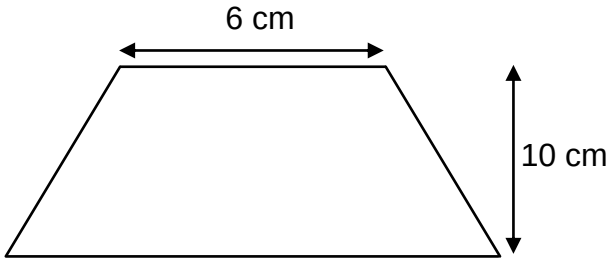


The area of the trapezium is 4 times the area of the triangle.
Show that the length of the base of the trapezium is 18 cm.

The area of a trapezium = $\frac{1}{2}(a+b)h$ *(4)*

(b) A square has a perimeter of 65 cm.

Calculate the area of the square.
Give your answer to 1 decimal place. *(2)*

Total 6 Marks

5. (a) The total sales for a company was £150,000 in June.
The total sales for the company in July was 15% lower than the sales in June.

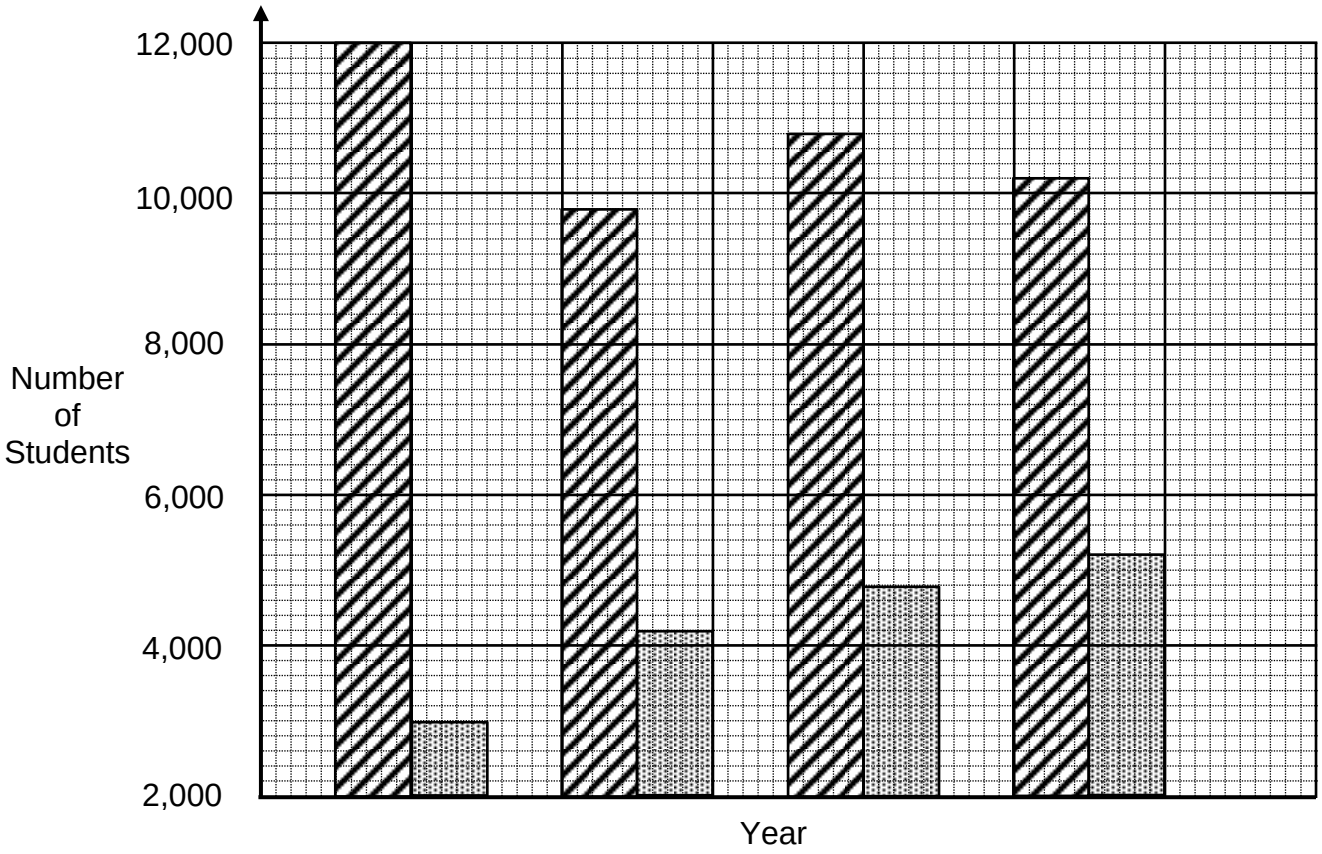
Work out the total sales for July. *(3)*

(b) Every month after July, the total sales each month continually increased by 5%.

In which month was the total sales higher than the total sales in June?
You must show your working. *(3)*

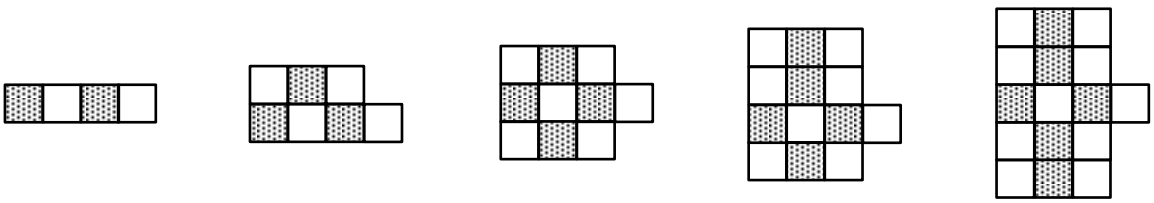
Total 6 Marks

6. The bar chart shows the number of EU and International students at a university between 2012 and 2015.



Write down **three** things that are wrong with this graph. ***Total 3 Marks***

7. Here are the first five patterns in a sequence.
The patterns are made from white and shaded squares.



Pattern Number 1 | Pattern Number 2 | Pattern Number 3 | Pattern Number 4 | Pattern Number 5

(a) Work out the number of white squares in pattern number 8. *(2)*

(b) Find an expression, in terms of n, for the **total** number of squares in pattern n. *(3)*

Total 5 Marks

8. (a) Juan works at a bakery.
He is putting in a food order for the week.
The company he orders from sells flour in 4 kg, 8 kg or 11 kg bags.
A 4 kg bag of flour costs £4.80.
An 8 kg bag of flour costs £9.20.
An 11 kg bag of flour costs £13.75.

Which size bag of flour is the best value for money?
You must show all of your working. *(3)*

(b) The bakery sells 32 rolls and 28 loaves of bread every day.
Each roll sells for 40p.
Each loaf of bread sells for £1.20.

How much money does the bakery make in one day? *(4)*

Total 7 Marks

9.

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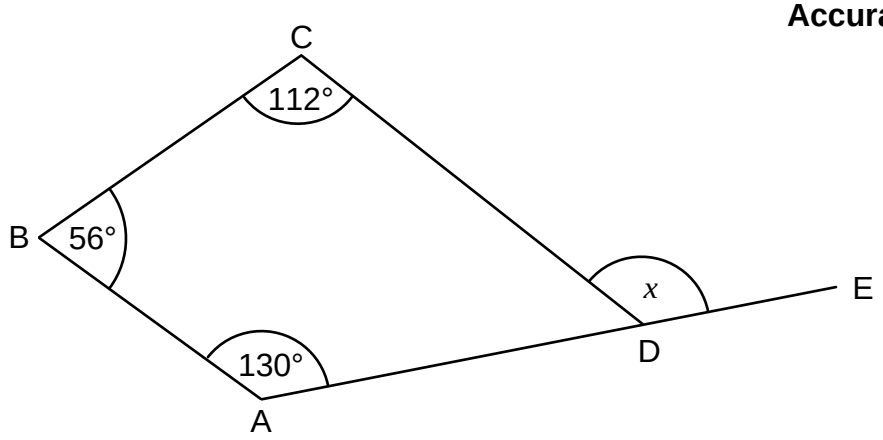


ABCD is a quadrilateral.
ADE is a straight line.

Work out the size of the angle marked x. ***Total 3 Marks***

10. Kyle calculates $\frac{2}{3} \times \frac{5}{6}$.

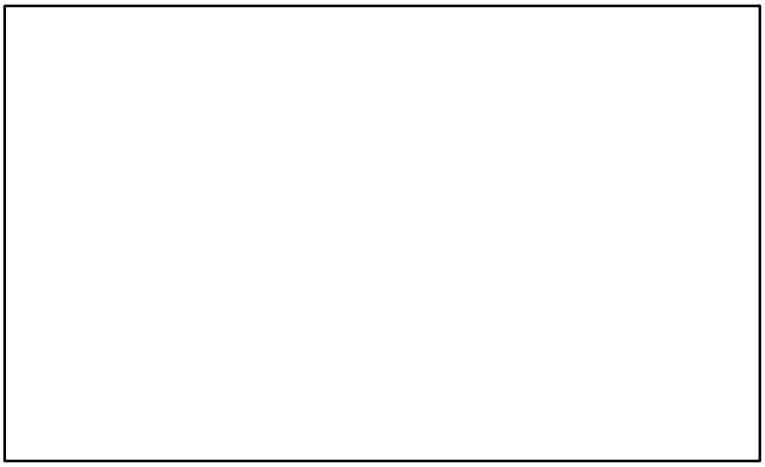
He uses the following method:

$$\frac{2}{3} \times \frac{5}{6} = \frac{2+5}{3 \times 6} = \frac{7}{18}$$

The answer is incorrect.

Describe the mistake Kyle made. ***Total 1 Mark***

11. Here is a scale diagram of a bathroom wall.



Scale: 1 cm represents 0.5 m

Ruth wants to cover the wall in square tiles.
Each tile is 6 cm × 6 cm.
Ruth has 4200 tiles.

Does Ruth have enough tiles to cover the entire wall?
You must show all of your working. ***Total 5 Marks***

12. (a) Expand and simplify $-2(3-2x)+9$ *(2)*

(b) Solve $\frac{5x}{9}-4=6$ *(3)*

Total 5 Marks

13. John, Sally & Alba are investigating the probability that a piece of buttered toast will land buttered side down.
John, Sally & Alba each drop pieces of buttered toast on the floor a number of times.
They recorded their data in the table.

	John	**Sally**	**Alba**
Buttered side up	30	24	46
Buttered side down	49	36	65

Sally drops another piece of buttered toast on the floor.

(a) Based on Sally's results only, estimate the probability that the piece of toast will land buttered side down. *(2)*

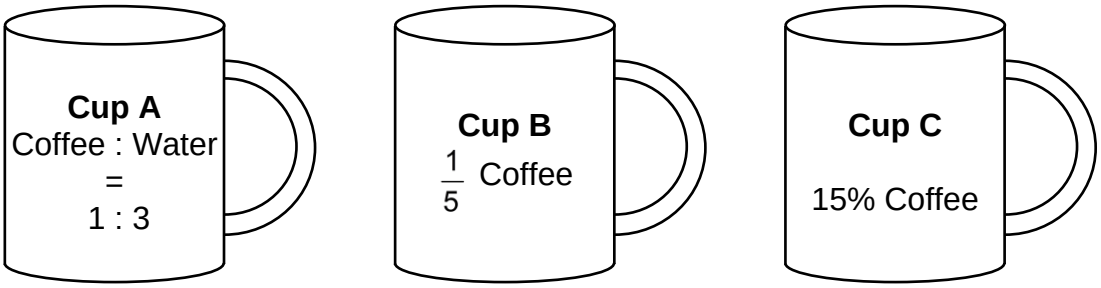
(b) Which of the three people's results would provide the best estimate for the probability that a piece of buttered toast will land buttered side down?
You must give a reason for your answer. *(1)*

Three more pieces of toast are dropped on to the floor.

(c) Using **all** the results in the table, work out an estimate for the probability that all 3 pieces of toast will land buttered side down. *(4)*

Total 7 Marks

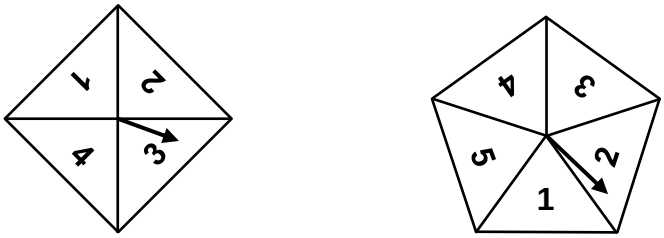
14. Tikhoze makes three cups of coffee by mixing coffee granules with water.



Which cup of coffee is the strongest?
You must show all of your working.

Total 3 Marks

15. Carla has set up a game using a fair four-sided spinner and a fair five-sided spinner.



Spinner 1 Spinner 2

Each spinner is spun once.
The score is calculated by subtracting the number spinner 1 landed on from the number spinner 2 landed on.

(a) Complete the possibility space diagram for all possible scores.
*Use the possibility space diagram in your **work booklet**.* *(3)*

Spinner 1

Spinner 2	***1***	***2***	***3***	***4***
1				*– 3*
2				*– 2*
3	*2*	*1*	*0*	*– 1*
4				*0*
5				*1*

Do not write on this paper

The game is played once.

(b) Work out the probability that the score is 0. *(2)*

The game is won if the score is 2 or more.

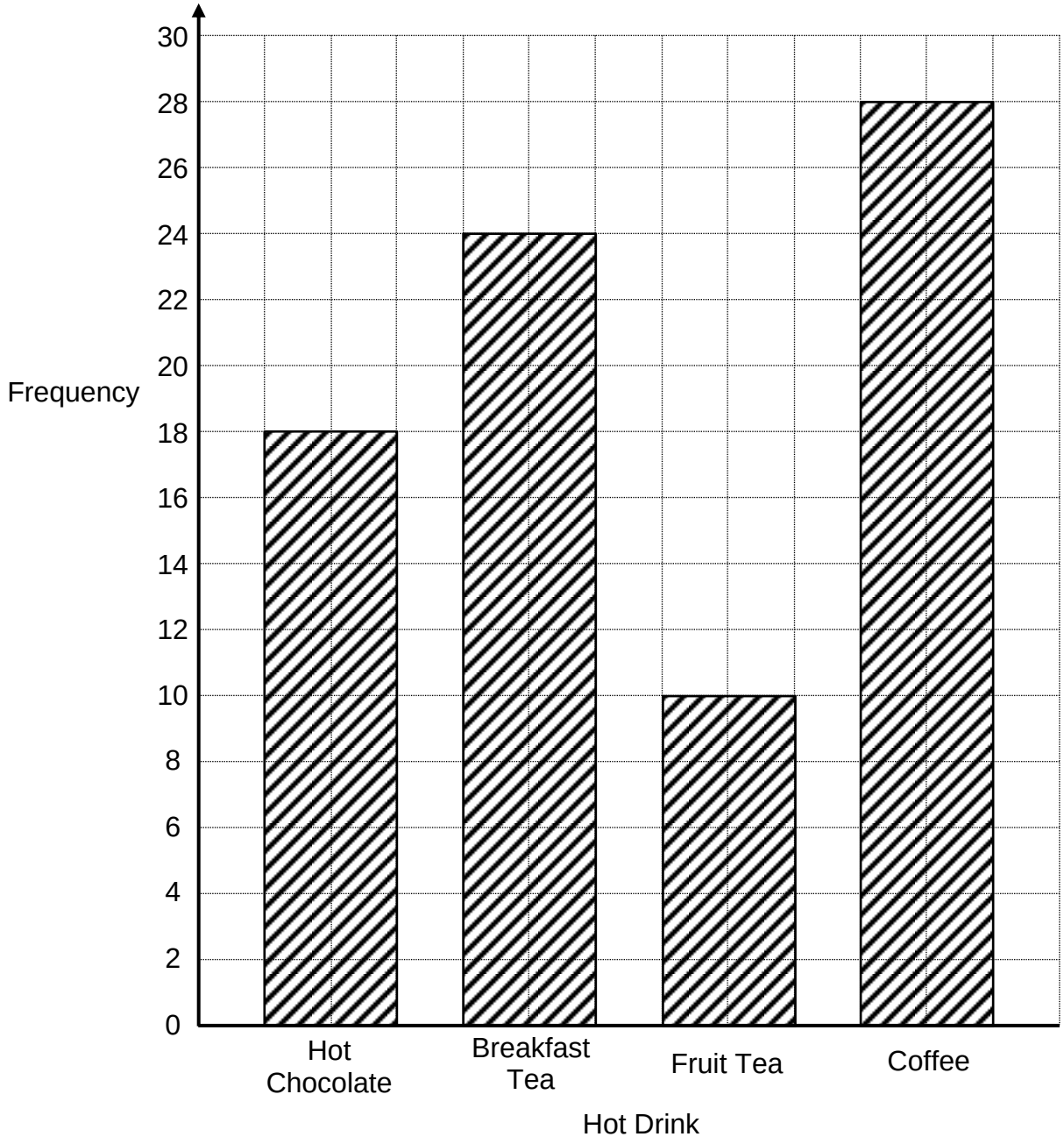
Carla plays the game twice in a row.

(c) Work out the probability that Carla wins both of these games. *(2)*

Total 7 Marks

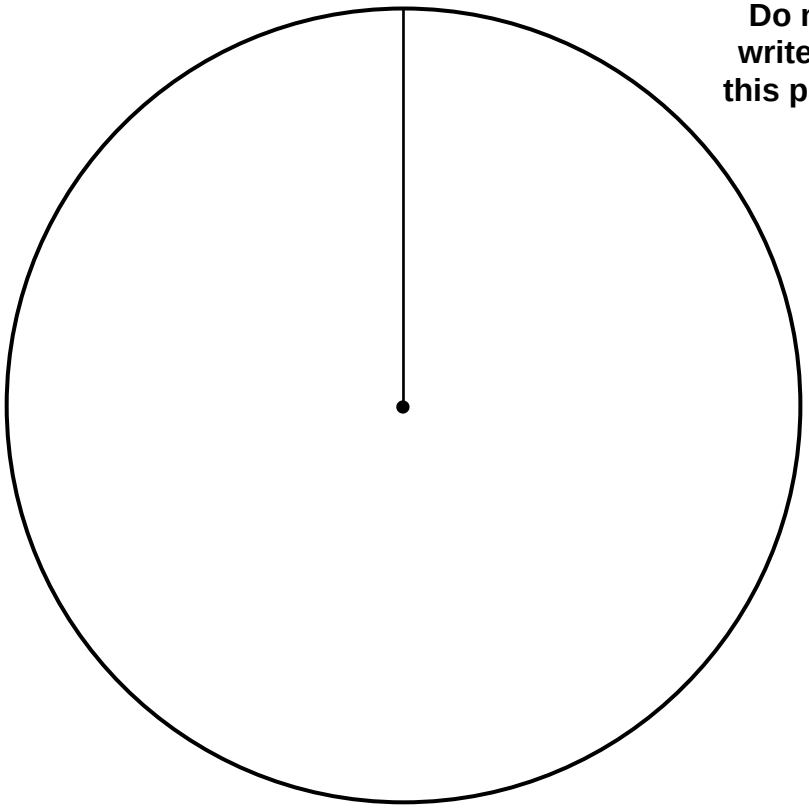
16. Liam asked a group of 80 people for their preferred hot drink.

His results were recorded in a bar chart.



Question 16 continues overleaf.

(a) On the copy of the diagram in your ***work booklet***, draw an accurate pie chart to represent this. *(4)*



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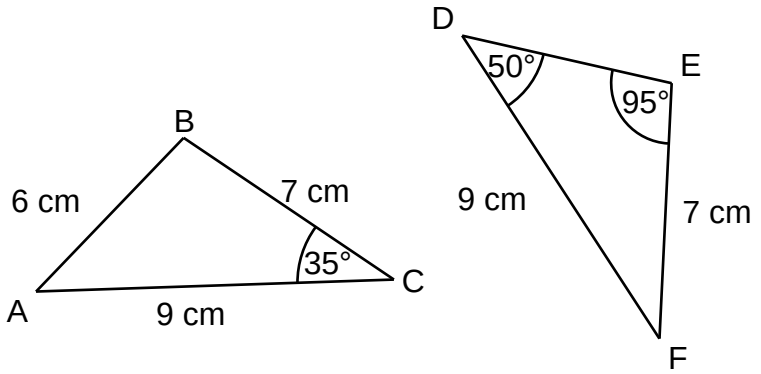
Liam says,

"It is easier to work out the number of people who prefer each drink from the bar chart that from the pie chart."

(b) Is Liam correct?
You must give a reason for your answer. *(1)*

Total 5 Marks

17. Here are two triangles, ABC and DEF.



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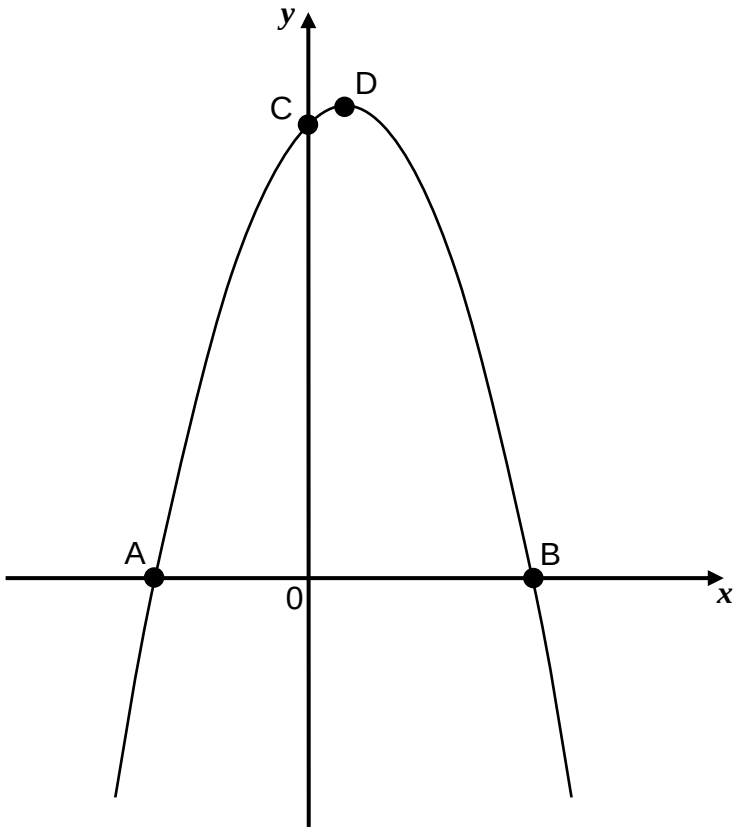
Is triangle ABC congruent to triangle DEF?
You must give a reason for your answer. ***Total 2 Marks***

18. The graph of $y = (3 - x)(x + 2)$ is sketched on the axis below.



(a) Write down the co-ordinates of the point C. *(1)*

(b) Write down the co-ordinates of the points A and B. *(2)*

(c) Write down the co-ordinates of the turning point, D, of the curve. *(3)*

Total 6 Marks

19. On a postgraduate Master's course, the ratio of men to women is 2 : 3.
40% of the men have a 2.1 in their undergraduate degree.
65% of the women have a 2.1 in their undergraduate degree.

What percentage of people on the Master's course have a 2.1 in their undergraduate degree? ***Total 4 Marks***

20. Lydia took part in a high jump competition.
There were seven other women in the competition.
The heights jumped, in meters, by the seven other women are shown below.

1.27 1.29 1.32 1.36 1.38 1.41 1.42

The mean height for **all** eight women in the competition was 1.36 m.

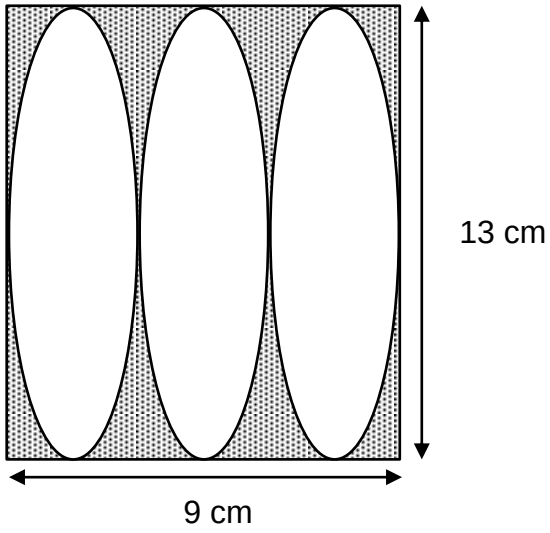
Did Lydia win the competition?
You must show all of your working. ***Total 4 Marks***

21. The area of an ellipse, A, can be found using the formula,

$$A = \frac{\pi ab}{4}$$

where a is the width of the ellipse and b is the height of the ellipse.

Three identical ellipses fit inside a rectangle.



Work out the area of the shaded section of the diagram.
Give your answer correct to 3 significant figures. ***Total 6 Marks***

22. Toby has a bag containing four different colours of jelly beans.
The jelly beans are yellow, green, red and white.

The probability of picking each colour of jelly bean is written in the table below.

Colour	Yellow	Green	Red	White
Probability	0.24	$5x$	$2x$	$4x + 0.1$

A jelly bean is taken out of the bag at random.
Work out the probability that this jelly bean is white. ***Total 5 Marks***

Total For Paper: 100 Marks