

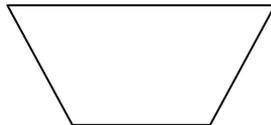
Write your name and your teacher's name.	TIME 1 hour 30 minutes	<i>Paper 2 of 10 from ZigZag Education</i>
Sample GCSE Examination Paper Foundation Tier Calculator Paper	Standard Equipment: pen, pencil, ruler, protractor, compasses, calculator.	

Name _____ Teacher's Name _____

Show your working.

- 1 (a) (i) Write 0.3 as a fraction. Answer [1]
(ii) Write 0.3 as a percentage. Answer [1]
(b) (i) Write $\frac{4}{5}$ as a decimal. Answer [1]
(ii) Write $\frac{4}{5}$ as a percentage. Answer [1]
(c) (i) Write 60% as a fraction. Answer [1]
(ii) Write 60% as a decimal. Answer [1]
(d) Arrange the values 0.3, $\frac{4}{5}$, and 60% in ascending order. Answer [1]

2 The shape below has one pair of parallel sides. The two non parallel sides are of the same length.

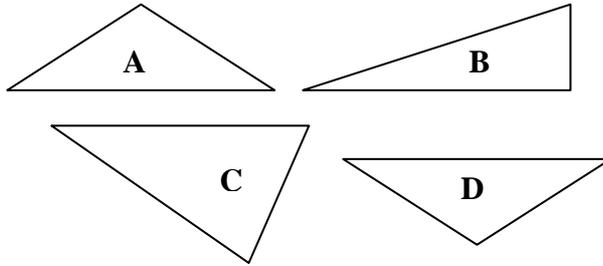


- (a) What is the name given to this shape? Answer [1]
(b) What is the order of rotational symmetry of this shape? Answer [1]
(c) Draw all of the lines of symmetry on this shape. [1]
(d) Mark on all of the obtuse angles in this shape. [1]

3 Apples cost 28p per kilogram. Pears cost 33p per kilogram.
Oranges cost 25p each. Bananas cost 35p per kilogram.

- (a) Mary buys 4kg of apples, 3kg of pears, 6 oranges, and 2kg of bananas.
What was the total cost of Mary's fruit?
.....
.....
.....Answer £..... [3]
(b) Mike buys 3kg of apples, 5kg of pears, 4 oranges, and some bananas.
He pays for this with a £10 note, and receives £5.46 change.
What was the weight of the bananas that Mike bought?
.....
.....
.....Answer kg [3]

- 4 (a) Which two of these shapes are congruent to each other?



Answer [1]

- (b) Explain how you know that these two shapes are congruent to each other.

.....
 [1]

- 5 Jane has a bag of 12 sweets. She lists the colour of each sweet, as shown below.

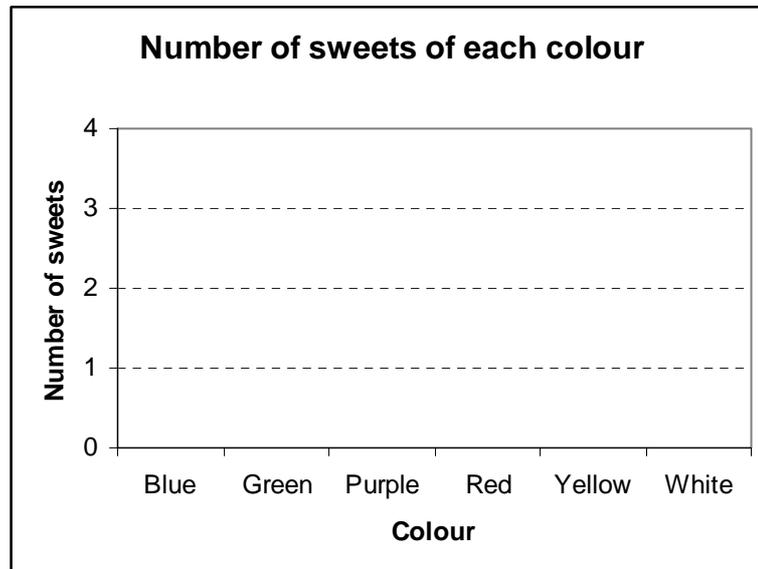
Yellow	Purple	Blue	Yellow
Purple	Blue	Red	Green
Green	Green	Yellow	White

- (a) Complete the frequency table below to show how many sweets Jane has of each colour.

Colour of sweet	Frequency
Blue	2
Green	
Purple	
Red	
Yellow	
White	

[3]

- (b) Show this information by completing the bar chart below.



[3]

- (c) Jane takes a sweet from the bag without looking.

- (i) What is the probability that Jane takes out a sweet that is blue?

Answer [1]

- (ii) What is the probability that Jane takes out a sweet that is not green?

..... Answer [2]

- 6 (a)** Construct an equilateral triangle of side 10cm. Do not erase your construction marks. The first side has been drawn for you.

_____ [3]

- (b)** Write down the perimeter of this triangle. Answer cm [1]

7 Simplify the following expression

- (a)** $-3n + n + n + 2n - n$ Answer [1]

Solve the following equations

- (b)** $8x = 24$ Answer $x =$ [1]

- (c)** $3 + y = 11$ Answer $y =$ [1]

8 (a) Use your calculator to find

$$32.7 \times 8.25$$

Write down the full calculator display. Answer [1]

- (c)** Calculate $\sqrt{999 + 75 - 50}$

 Answer [2]

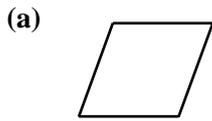
9 (a) Write the number six thousand eight hundred and five in figures. Answer [1]

(b) Write 8152 correct to the nearest 10. Answer [1]

(c) What is the value of the 1 in the number 8152? Answer [1]

(d) What is $\frac{3}{4}$ of 8152? Answer [1]

10 State whether or not each of the following shapes will tessellate.
 In each case draw a small sketch, containing at least six shapes, to explain your answer.

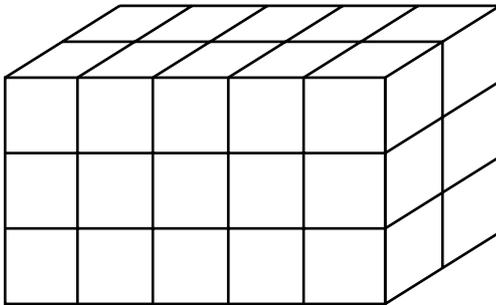


Answer [2]



Answer [2]

(c) The following cuboid is constructed from 1cm cubes.
 What is its volume?



.....
 Answer [2]

11 (a) In a cricket match, Team A's two scores were 286 runs and 336 runs.
 Team B's two scores were 235 runs and 462 runs.
 The winner is the team scoring the greatest total of the two scores.

(i) Which team was the winner of the match?

.....

 Answer [3]

(ii) How many more runs did the winning team score than the other team?

..... Answer [2]

(b) A theatre has 32 rows of seats. Each row contains 15 seats.
 How many seats are there in the theatre?

.....
 Answer [2]

For Questions 12 onwards there is no marked out space to write your answers. Where there is not enough space, write your answers on separate paper. In your actual GCSE examination, marked spaces are normally provided on the whole paper.

12. Solve the equations–
 a) $6 - 2x = 2x - 6$
 b) $2(1 + x) = x - 2$

Calculate the value of y when $x = 3$ in the equations–

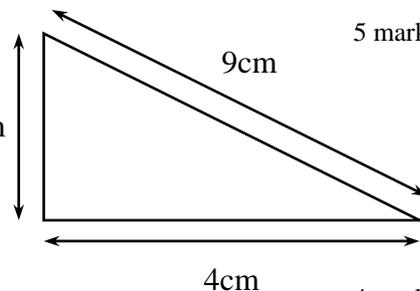
- c) $y = x(x + 1)$
 d) $y = 10^x$

8 marks

13. Draw the graph of $y - x = 7$

5 marks

14. Work out a formula for the perimeter and area of the triangle. $x\text{cm}$



4 marks

15. Work out–

- (a) 169^2
 (b) 2^{24}

2 marks

16. (a) Estimate the value of $(39 \times 98) \div 19$ without a calculator, and showing your working.

- (b) Calculate the exact value of $(39 \times 98) \div 19$ giving your answer as a mixed fraction.

- (c) Work out the difference between your estimate and the exact value of $(39 \times 98) \div 19$.

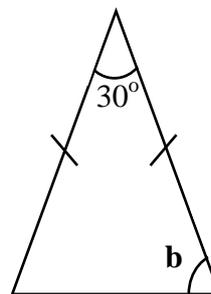
4 marks

17. A phone costs £12 plus vat at 17.5%.
 Calculate the cost of the phone after VAT has been added.

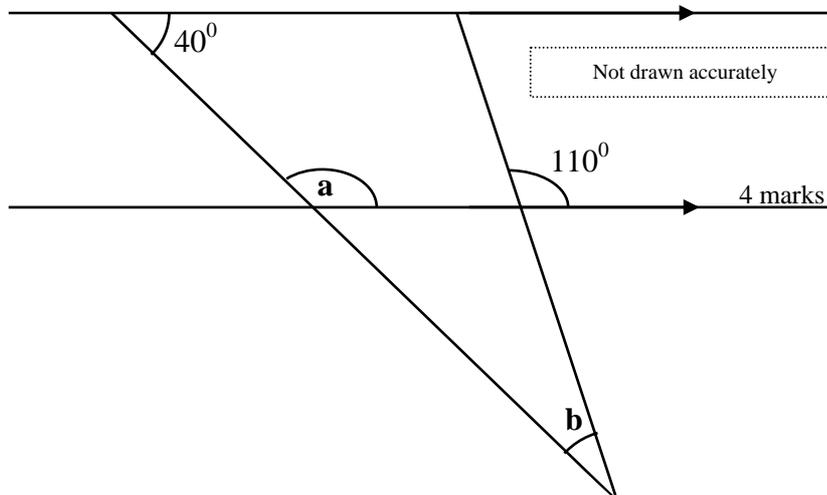
3 marks

18. The diagram shows an isosceles triangle. Work out angle b .

2 marks

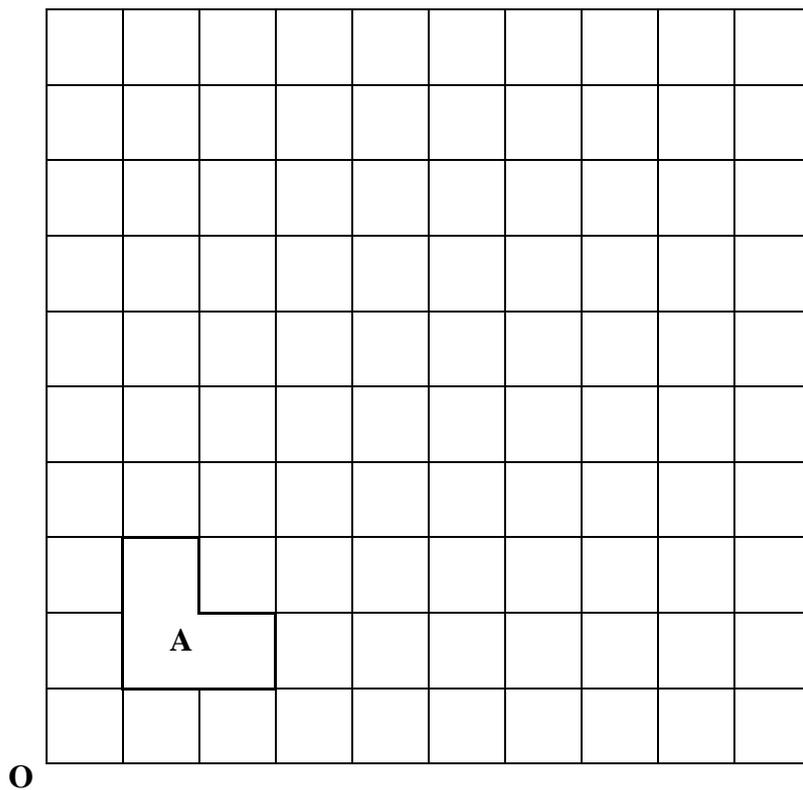


19. Calculate the two missing angles a and b .



4 marks

20. The diagram contains shape A, which is a two dimensional shape.
 Shape B is an enlargement of shape A, with scale factor 3.
 The centre of enlargement is at the bottom left corner of the diagram, marked O.



- (a) Copy the diagram and draw shape B onto the diagram.
- (b) Draw on the diagram a line of symmetry which is common to shapes A and B. 7 marks
- (c) Write down the perimeters of the two shapes A and B. Link these answers to the enlargement.

21. There are four balls on a pool table. Two of these balls have a coloured spot on them, and the other two have a coloured stripe on them. Each ball is also marked with a single number. The spotted balls are marked with the numbers 1 and 2, and the striped balls are marked with the numbers 3 and 4. All the balls are put into a bag, and Jane selects one ball from the bag at random.
- (a) What is the probability that the selected ball is numbered 3?
- (b) What is the probability that the selected ball is spotted, or even numbered, or both?
- (c) What is the probability that the selected ball is odd numbered and striped?

Jane then selects a 2nd ball at random, so she now has two pool balls. The possible pattern combinations are represented in the following table. There are 4 possible combinations.

First Ball Selected	Second Ball Selected
stripe	spot
stripe	stripe
spot	spot
spot	stripe

Jane begins to similarly list the possible combinations of numbers. She begins:

First Ball Selected	Second Ball Selected
1	2
1	3
.....

- d) Explain why the table does not have the combination 1, 1.
- e) Copy and complete the table of possible number combinations.
- f) How many possible combinations of numbers are there? 6 marks