Foundation Tier	**TIME** 1hour 30 minutes	*Paper 1 of 5 from ZigZag Education*
Sample Examination Paper 1	Standard Equipment: pen, pencil, ruler, protractor, compasses.	
You are **NOT** allowed to use a calculator with this paper. Show your working. Write your name and your teachers name.		

Name _____ Teachers Name _____

1. Here is a list of numbers.

21, 22, 23, 24, 25, 26, 27, 28

(a) From this list write down

(i) An even number Answer (a) (i).....[1]

(ii) Three numbers that add to give 68

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..... Answer (a)(ii).....[1]

(b) (i) Which number is a cubic number? Answer (b) (i).....[1]

(ii) Explain why this is a cubic number.

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.....[1]

(c) (i) Which number in the list has 11 as a factor? Answer (c) (i).....[1]

(ii) Explain why 11 is a factor.

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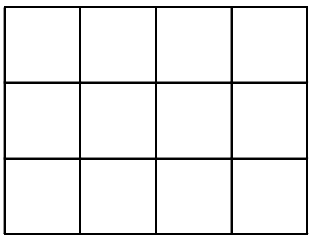
.....[1]

2. (a) The rectangle below is made up of squares of side 1 cm



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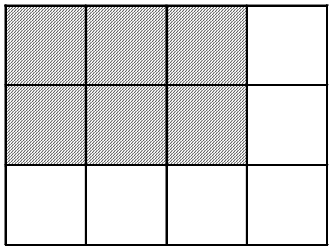
(i) Work out the perimeter of this rectangle Answer (a) (i).....cm [2]

(ii) Work out the area of the rectangle Answer (a)(ii)..... cm^2 [2]

(b) What percentage of the whole rectangle below has been shaded?



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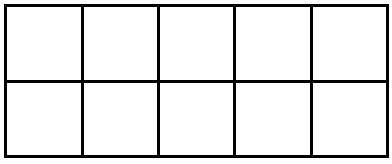
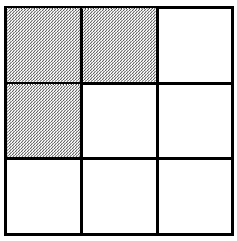
Answer (b)..... % [2]

(c) Shade $\frac{1}{5}$ of the rectangle below. [1]





(d) What fraction of the square is shaded?
Give your answer in its simplest form.

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..... Answer (d).....[2]

3. The table below shows the air distances, in miles, between some cities.

London			
3460	New York		
570	3960	Berlin	
6010	7800	5980	Cape Town

A plane flies between these cities.

(a) On Monday, the pilot makes a trip from London to New York.
How far does the pilot fly on Monday? Answer (a)..... [1]

(b) (i) On Tuesday the pilot flies from New York, to London and then to Berlin.
How far does the pilot fly on Tuesday?

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..... Answer (b)(i) .....minutes [2]

(ii) The pilot left London at 17:45, and arrived in New York at 19:13.
How long did the flight take?

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..... Answer (b)(ii) .....miles [2]

(iii) In one week the pilot flew 35647 miles.
What is this distance to the nearest 1000 miles? Answer(iii) .....miles [1]

(c) The pilot flies from London to Berlin in 57 minutes. How many miles did the plane travel per minute?

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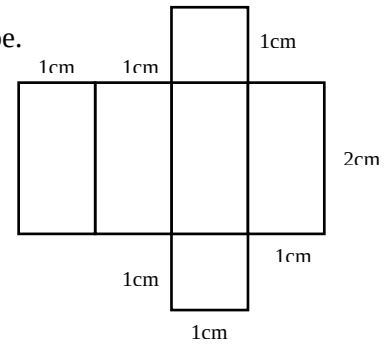
..... Answer (c)..... [2]

4. This is the net of a solid shape.



(a) (i) The net is made up of two shapes. Name the two shapes. Shape 1 Answer (a)(i) .....[1]
Shape 2 Answer (a)(i) .....[1]

(ii) Write down the name of the solid that the net will make. Answer (a)(ii).....[1]

(b) Calculate the volume of the *solid shape* the net forms.

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..... Answer (b).....[2]

(c) Draw any lines of symmetry on the *net of the shape*. [1]

5. At random, the heights of fifteen oak trees were measured in metres.
The measurements are to the nearest metre.

1 2 3 4 4 7 10 11 11 15 12 5 14 6 6

(a) Reorder the heights from smallest to largest.

.....

.....[1]

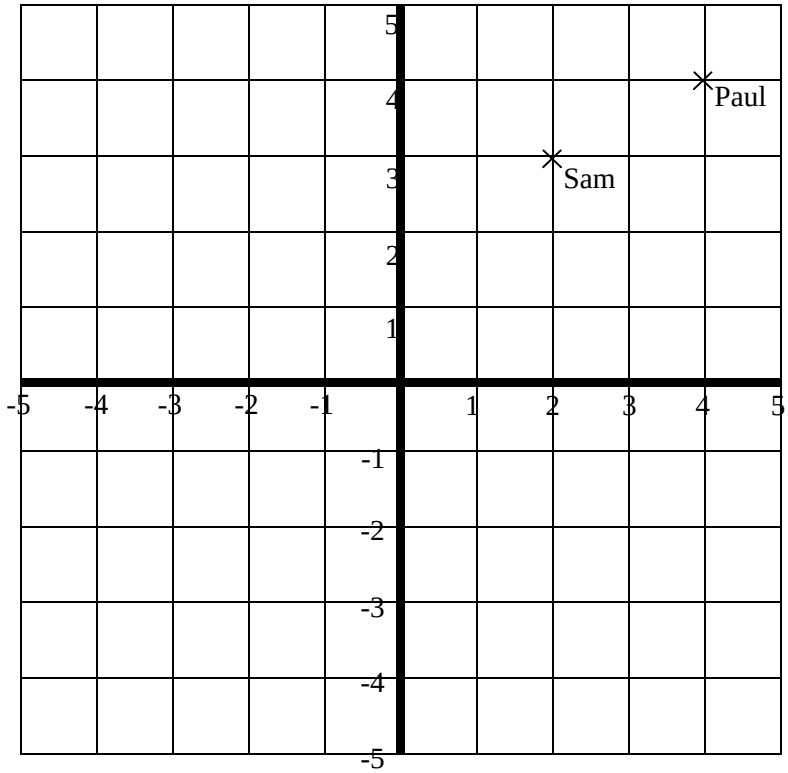
(b) What is the median height of the 15 oak trees? Answer .....m [1]

(c) Complete the frequency table below.

Height in metres	Frequency
1 - 5	
6 - 10	
11 - 15	

[3]

6. The locations of Paul and Sam are shown on the diagram below



(a) Write down the coordinates of Paul. Answer (a) (…… , …...) [1]

(b) Kate is at point (– 4, 4) on the grid.

(i) Mark this point on the grid, with a label saying Kate, and draw a line linking Paul and Kate.

Answer (i) .....[1]

(ii) What is the horizontal distance on the diagram from Kate to Paul?

Answer (ii) .....[1]

(c) What are the coordinates of the midpoint of the line between Kate and Paul.

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Answer (c) (…… , …...) [1]

(d) Sam is at point (2, 3).

(i) What is the distance between Kate and Sam on the diagram. Answer .....cm [1]

(ii) The scale on the diagram is 1 cm square represents 50 metres.
What is the real distance between Kate and Sam?

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..... Answer .....m [2]

7. A chef makes 90 salads. One third of them contain pasta.
The chef sells the salads containing pasta for £3, and the rest of the salads for £3.50.

(a) How much money does the chef collect? Answer (a) £.....[2]

(b) The chef makes a profit of £1.10 per salad on average.
How much profit does the chef make that day?

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..... Answer (b) £.....[2]

8. Below are the results from a child's spelling tests over a term.

3 3 5 5 5 5 6 7 9 10

(a) Calculate the mean mark over the whole term Answer (a).....[3]

(b) Write down the mode of the marks for the term Answer (b).....[1]

9. (a) Simplify the expression
$7x + 5x + 3x$ Answer (a).....[1]

(b) Solve the following equations.

(i) $12x = 48$ Answer (i) .....[1]

(ii) $8 + x + 6 + 2x = 17$ Answer (ii) .....[2]

(c) For the formula $f = 3s - 4$
find the value of f, when $s = 7$ Answer (c).....[1]

10. (a) Write the three missing terms of the sequence

15 21 __ 33 __ __ [2]

(b) Write down the values of the following, in the simplest form.

(i) $\sqrt{64}$ Answer (i) .....[1]

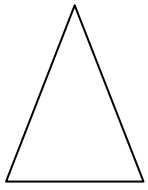
(ii) 10^2 Answer (ii) .....[1]

(iii) 2^3 Answer (iii) .....[1]

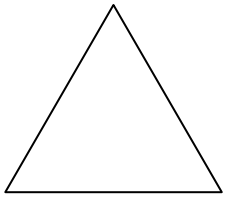
11 Here are two triangles.

Triangle A has two sides the same length.

Triangle B has all its sides the same length.



A



B

(a) (i) Write down the special name for triangle A. Answer (i) .....[1]

(ii) Write down the special name for triangle A. Answer (ii) .....[1]

(b) (i) Write down the order of rotational symmetry for triangle A. Answer (i) .....[1]

(ii) Write down the order of rotational symmetry for triangle B. Answer (ii) .....[1]

12. A car mechanic buys engine oil in 1.5 litre bottles. He buys 7 bottles.

(a) How many millilitres of oil does the mechanic have?

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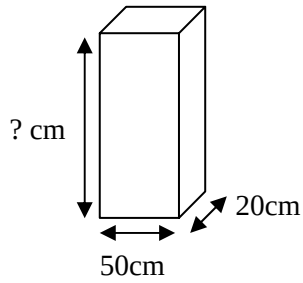
..... Answer(a)..... cm^2 [2]

(b) The mechanic pours $3000cm^3$ of the oil into a cuboid tank, the base of the tank measures $50cm \times 20cm$.
What height would the tank have to be, for it to be full of oil?



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..... Answer (b).....cm [5]

13. There are 20 golf balls in a bag. 10 are white, 9 are yellow and 1 is pink. A golfer selects a ball at random.

(a) What is the probability that they select a pink ball? Answer (a).....[1]

(b) What is the probability that they do not select a pink ball? Answer (a).....[2]

14. (a) Simplify
$6r + 5s – 3s + r$

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..... Answer (a).....[2]

(b) Factorise
$x^2 + 7x$

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..... Answer (b).....[1]

(c) Solve the equations–

(i) $4(3x + 5) = 38$

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..... Answer (i) x = ...[3]

(ii) $27 + 3x – 9 = 9x$

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..... Answer (ii) x = ...[3]

15. Estimate the answer to the following

$$\frac{10.33 + 889}{101 - 1.01}$$

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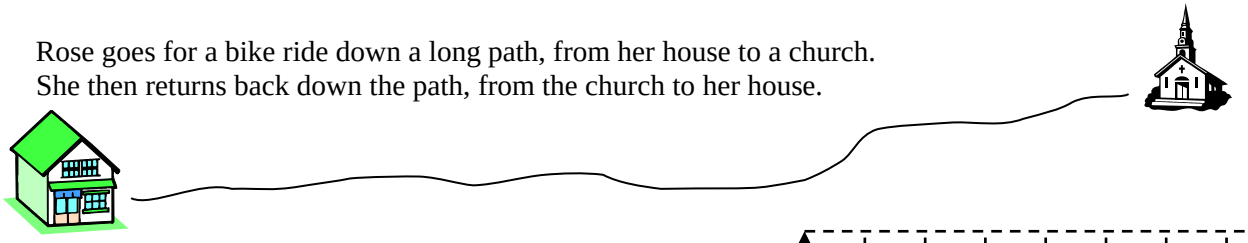
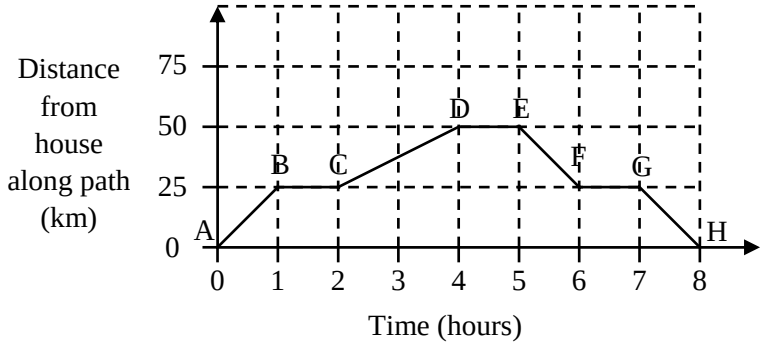
..... Answer .....[2]

16. Rose goes for a bike ride down a long path, from her house to a church.
She then returns back down the path, from the church to her house.



Her ride is represented by this graph.



(a) How far is the church from the house along the path? Answer (a).....[1]

(b) During her cycle Rose takes rests and sits down.

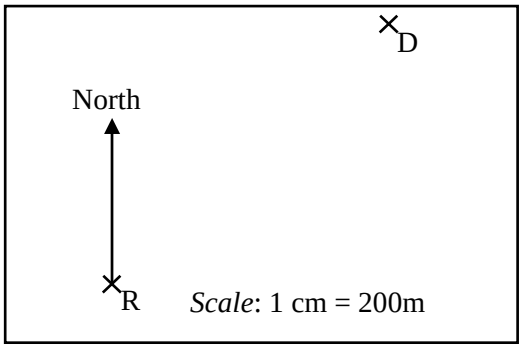
(i) How many hours in total during the cycle is Rose stopped for? Answer (i) .....[1]

(ii) How many hours is she away from the house? Answer (ii) .....[1]

(iii) What is her average speed during her first hour's cycle? Answer (iii) .....[1]

(iv) On which section did she cycle slowest? Answer (iv) .....[1]

17. The diagram shows the position of Rose's house (R) and Damian's house (D).



[Scale 1 cm = 200m]

(a) Measure and use the scale to work out the true distance of R from D. Answer (i)..... m [1]

(b) Measure and write down the bearing (in degrees) of D from R. Answer (ii) ..... ° [1]

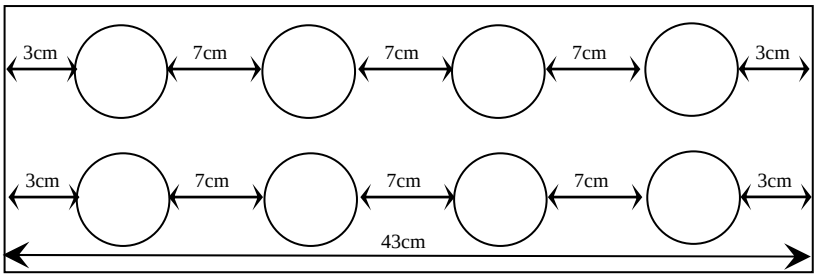
18. Below is a recipe for making a cake.

To make one cake you will need:
• 150 g Self raising flour • 150 g Sugar • 3 eggs • ½ pint of milk

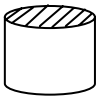
(a) Complete the list of ingredients to make 8 cakes.

(i) Self raising flour — Answer (i) .....g [1]
(ii) Sugar — Answer (ii) .....g [1]
(iii) Eggs — Answer (iii) .....[1]
(iv) Milk — Answer (iv) .....pints [1]

(b) The cakes are baked in the following baking tray. [not drawn to scale]



The cake mixture is placed in the circular spaces, making cylindrical cakes.

This diagram represents one of the cakes. 

(i) Calculate the diameter of each of the cakes. Answer .....cm [2]

(ii) Calculate the shaded area of the cake shown in the diagram.
Take the value of π to be 3.14.

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..... Answer ..... cm^2 [3]