DO NOT WRITE ON THIS PAPER	**TIME –** 1 hour 30 minutes	*Paper 3 of 5 from ZigZag Education*
Sample GCSE Examination Paper **Foundation tier non-calculator paper**	Standard Equipment: pen, pencil, ruler, protractor, compasses.	

1. Jim must leave for the airport at 10:15 in the morning.
It is now 08:25.
How long is it until Jim must leave?

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

2. a) What number is half way between 10 and 13? Answer ..... [1]

b) What number is half way between 10 and 10½? Answer ..... [1]

c) Calculate 30% of 120. Answer ..... [1]

3. A Mathematics department has 250 students. 51 of these students are in the 6th form and 30 are in year 11.

a) How many students, in the Mathematics department, are not in the 6th form?

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

$\frac{1}{3}$ of the 6th form is in the lower 6th.

b) How many of the 6th form students are in the lower 6th?

.....

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

c) What fraction of the Mathematics department is in year 11? Write your answer in its simplest form.

.....

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

4. a) 120,000 103,000 21,000 99,999
List these numbers from smallest to largest.

..... [2]

b) What is 1 more than 93,999?

.....Answer ..... [1]

c) Add 93,999 to 601.

.....Answer ..... [1]

5. a) Calculate 0.4 + 0.8 Answer ..... [1]

b) Calculate 1.4 – 0.8 Answer ..... [1]

c) Calculate 0.3×4 Answer ..... [1]

d) Calculate $0.8 \div 4$ Answer ..... [1]

6. a) The probability that Jo will cycle to work is 0.6.
What is the probability that she does not cycle to work?

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

b) What is the range, sum, and mean of 22, 32 and 45?

.....Range ..... [2]

.....Total ..... [2]

.....Mean ..... [2]

7. Solve the equations:

a) $2x = 9$ Answer ..... [1]

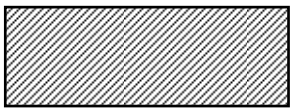
b) $x + 8 = 11$ Answer ..... [1]

Simplify the expressions:

c) $2a + 3a + 4a$ Answer ..... [1]

d) $2a + 3a – 4a$ Answer ..... [1]

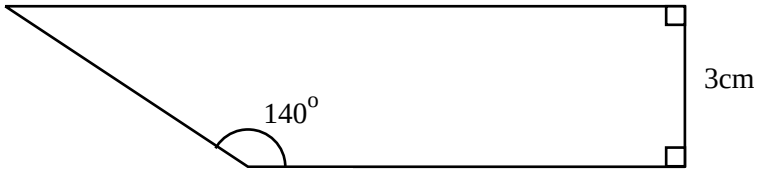
8. What is the area of this rectangle?



.....

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

9. a) In the space below draw this diagram accurately. [6]



Not drawn accurately

Use a protractor to draw both the 140° and the two 90° angles

b) Measure the slanted length to the nearest mm. Answer ..... cm [2]

10. Anita thinks of a number and trebles it.

a) If Anita starts with 7, what should she end up with? Answer ..... [1]

b) If her answer is 99 what did she start with? .....

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

c) If she started with x what did she end up with?.....

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

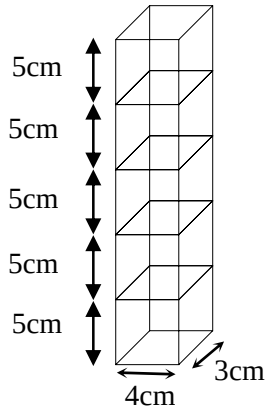
11. A box has a width of 3cm, a length of 4cm and a height of 5cm.

a) Calculate the volume of this box.

.....

.....

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



There are many boxes like this one, all of the same size.
They all have a width of 3cm, a length of 4cm and a height of 5cm.
These boxes are placed onto a crate.
The boxes are stacked so that they are 5cm high as shown.

b) How high are the boxes stacked?

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

An empty crate has a width of 30cm, and a length of 40cm.
The boxes fit exactly into the crate.

c) How many boxes are on the bottom layer of the crate? .....

.....

.....Answer ..... [3]

12. 0.02 1.1 1.021 2.10 0.0123

a) List these numbers from smallest to largest. ..... [2]

b) Subtract the smallest number from the largest. .....

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

13. a) The sticker price of the French Horn is £39
How much is the French Horn after the sale?

.....

.....

.....

.....

.....Answer ..... [5]

b) Find an approximate answer to: 999×43

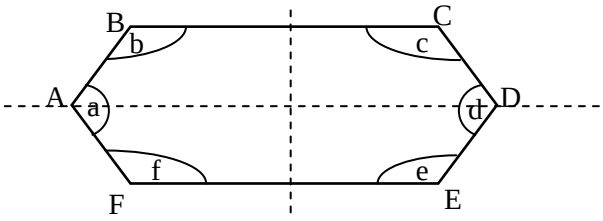
Show all your working carefully for this question

.....

.....

.....Answer ..... [3]

14. a) Name the shape ABCDEF.



Answer ..... [1]

The shape has rotational symmetry of order 2 and 2 lines of symmetry as indicated with dashed lines.

The shape is re-constructed by moving point B, 1 cm to the right. One other point is also moved 1cm. Which other point was moved and in which direction, if the new shape has:

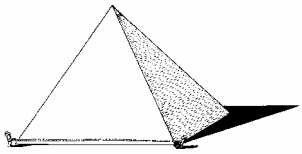
b) a vertical line of symmetry and no rotational symmetry? Answer ..... [1]

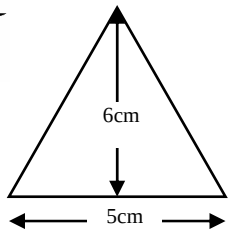
c) a horizontal line of symmetry and no rotational symmetry? Answer ..... [1]

d) no lines of symmetry but does have rotational symmetry of order 2?
Answer ..... [1]

15. a) Sketch the net of a square-based pyramid. [1]

John makes this square-based pyramid.
He uses five pieces of card.
He uses four triangles, made of card, and one other piece.
The four triangles are like this one.

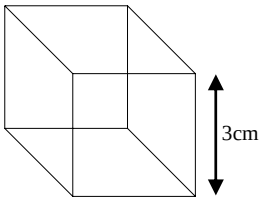




b) Draw accurately and to scale the missing piece of card.
You do not need to show flaps.

[2]

16. a) Draw the accurate net of a 6-sided cube whose sides are all 3cm long.



[3]

All faces of the cube are painted.

b) What area will be painted?

.....

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

17. Simplify the expressions:

a) $2a + 3 – a + 1$ Answer ..... [1]

b) $a^4 \times a^2$ Answer ..... [1]

c) $2a \times 5b$ Answer ..... [1]

Solve the equation:

d) $2(x + 2) = 10$.....

.....

.....Answer ..... [3]

18. Evaluate:

a) 3^3 Answer ..... [2]

b) 6^2 Answer ..... [2]

19. A survey is carried out on 17 people in Summer and on some different people in Winter.
The survey involves both children and adults.
The people surveyed are summarised in this table:

	Children	*Adults*
Summer	10	7
Winter	8	15

a) How many *children* were surveyed? .....Answer ..... [2]

b) How many adults were surveyed in the winter? Answer ..... [1]

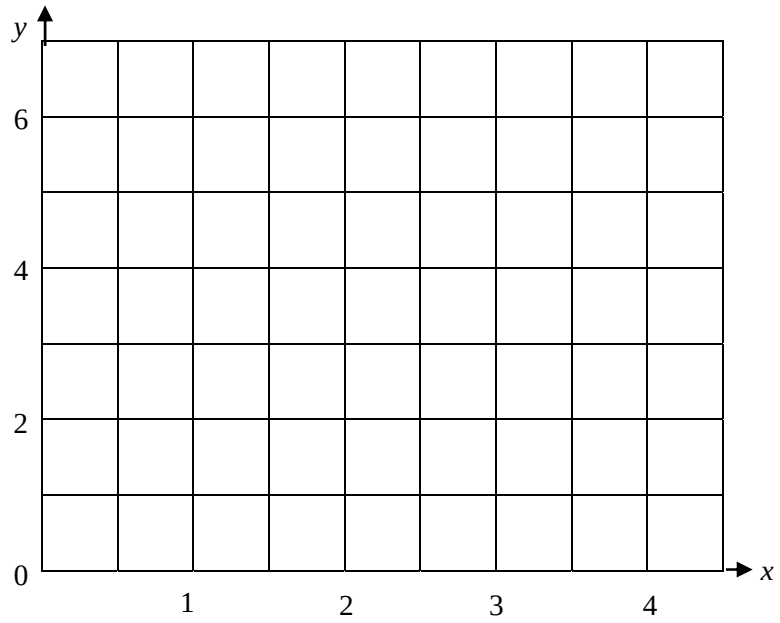
One of the people surveyed is selected at random.

c) What is the probability that the person is a child? Give your answer in its simplest form.
.....
.....Answer ..... [2]

d) What is the probability that the person was surveyed in winter? Give your answer in its simplest form.
.....
.....Answer ..... [2]

20. a) Complete the table and use these values to draw the graph of $y = 2x + 1$

x	1	2	3
$2x + 1$			



[4]

b) Use your graph to work out x when y is 4.

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