Write your name and your teacher's name.	**TIME** 1 hour 30 minutes	*Paper 3 of 5 from ZigZag Education*
Sample GCSE Examination Paper **Foundation Tier Calculator Paper**	Standard Equipment: pen, pencil, ruler, protractor, compasses, calculator.	

Show your working.

Name _____ Teacher's Name _____

1 **(a)** Write down all of the common factors of 12 and 18. Answer ..... [2]

12 **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23**

Write down

(b) two numbers from the oval that are multiples of 7 Answer ..... [1]

(c) any two numbers from the oval that are factors of 60 Answer ..... [1]

(d) a square number from the oval Answer ..... [1]

2 Mark was working out the cost of petrol for a van journey.

He first worked out how much petrol he would need, and then the cost of the petrol. He used the following formula.

Number of litres needed = Number of litres per mile × Number of miles travelled

Mark knew that he would need 0.15 litres per mile. He was travelling 140 miles.
The cost of petrol was 71p per litre.

What was the total cost of the petrol for Mark's journey?

.....

.....

.....

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

3 **(a)** Write the number 12654 in words

..... [1]

(b) Write down 12654 to the nearest hundred

..... [1]

(c) Calculate five sixths of 12654

..... [1]

(d) Write down what the 2 represents in 12654

..... [1]

4 Work out the following to one decimal place–

(a) $\dfrac{15.2 - 4.3}{6.02 + 0.936}$

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

(b) $7.81^2 \big/ 2.24^3$

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

(c) $\sqrt{8.72 - 5.1}$

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

5 Simplify this expression–

(a) $7p + 8q - 3p - q$

.....

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

Solve the following equations–

(b) $12 - x = 7$

.....

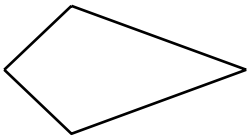
.....Answer ..... [2]

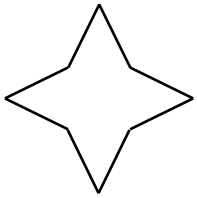
(c) $6 = 12 + x$

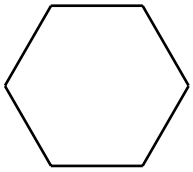
.....

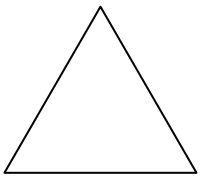
.....Answer ..... [2]

6 Draw on all the lines of symmetry for each of the following shapes.

(a) 

(b) 

(c) 

(d) 

[4]

7 Sam has a bag containing red and green discs of the same shape and size.
There are five red discs and two green discs in the bag.
Sam takes one disc out of the bag at random without looking at it.

(a) What is the probability that Sam has taken out a red disc?

Answer ..... [1]

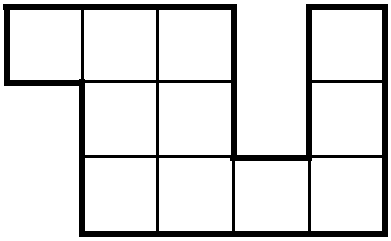
Sam does not put the disc back into the bag, and he takes another disc out at random.

(b) If the first disc to be taken out of the bag was red, what is the probability that the second disc taken out is a green disc?

.....

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

8 All of the squares in the following shape have sides of 1cm.



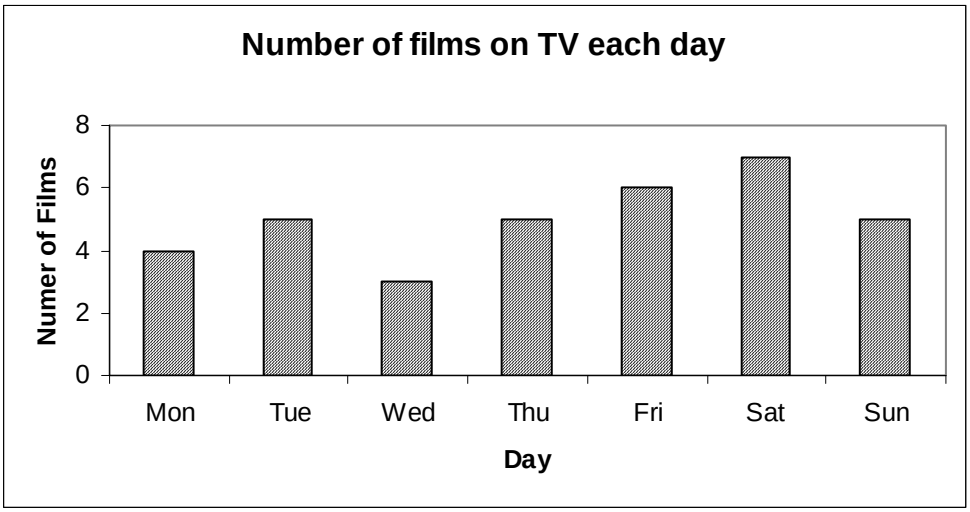
(a) What is the perimeter of this shape?

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

(b) What is the area of this shape?

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

9 George counted the number of films shown on television each day for a week.
This bar chart shows George's results.



(a) How many films were shown on Wednesday? Answer ..... [1]

(b) On which day were the most films shown? Answer ..... [1]

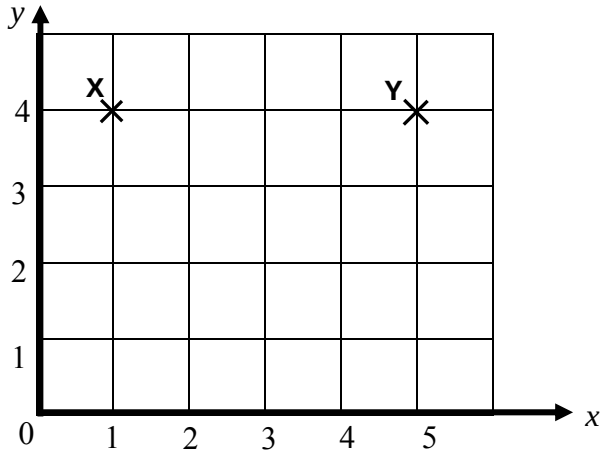
(c) How many films were shown in total during the seven days?

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

(d) What was the mean number of films shown on TV each day, for these seven days?

Answer ..... [1]

10 The squares in the diagram below are of side 1cm.



(a) **(i)** Write down the coordinates of point **X**. Answer ..... [1]

(ii) Write down the coordinates of point **Y**. Answer ..... [1]

(b) Mark on the diagram a point **Z** with coordinates (5, 2). [1]

(c) What is the distance between point **X** and point **Y**? Answer ..... cm [1]

(d) What is the area of triangle **XYZ**?

.....

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

11 A pack of chewing gum costs 22p. Hannah has a £5 note.

(a) How many packs of chewing gum can Hannah buy with her £5 note?

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

(b) Hannah decides to buy six packs of chewing gum.
If she pays with her £5 note, how much change should she get?

.....Answer £ ..... [3]

(c) Tom has a two pound coin. He buys some chewing gum and gets 68p change.
How many packs of chewing gum did Tom buy?

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

12 Jim throws a biased coin 532 times. It lands heads 302 times.

a) Estimate the probability that the next throw will be heads. Give your answer as a decimal.

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

Jim throws the coin a further 100 times and it lands heads 56 times.
Jim says that the probability that the coin will land heads on *any* throw is 0.56.

b) Explain why this is not the best estimate that the coin will land heads.

.....

..... [1]

13 a) Write 0.235 as a simplified fraction. .....Answer ..... [1]

A pair of trousers costs £122 before a 30% discount is applied.

b) Calculate the cost of the trousers after the discount.

.....

.....

.....Answer £..... [3]

A computer cost £866 plus VAT at 17.5%.

c) Calculate the cost of the computer after VAT has been added to the nearest penny. .....

.....

.....

.....Answer £..... [3]

14 The exchange rate for US dollars and Euros is such that $1 = 0.4Euros.

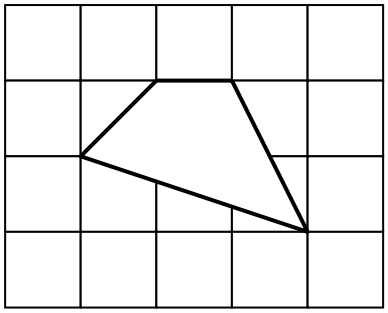
a) How many Euros can you get for $22?

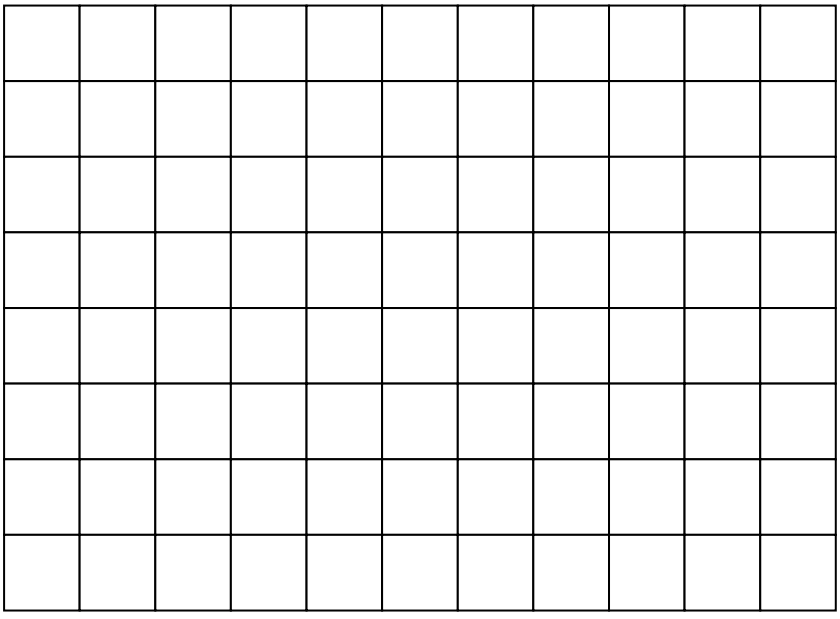
.....Answer.....Euros [1]

b) How many dollars can you get for 1 Euro?

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

15 Make the shape in the small grid three times larger in the large grid provided.





[2]

16 **'Double the number, and add 45'**

Using the above rule, calculate the answer when we start with

a) i) 5 .....Answer ..... [1]

ii) x .....Answer ..... [2]

b) i) If the answer is 1000 when using the above rule, what did we start with?

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

ii) If the answer is y when using the above rule, what did we start with?

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

"The rule 'Double and add 45' is equivalent to the rule 'Add 45 and double'"

c) Do you agree or disagree with this statement? Justify your answer.

.....

..... [1]

17 A hiker walks 47 miles and drinks 3 gallons of water.
Estimate the number of kilometres the hiker walks and the volume of water he drinks in litres.

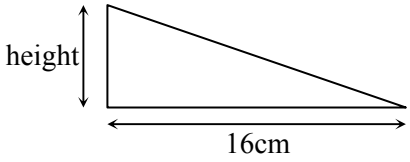
Number of kilometres .....

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

Number of litres .....

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

18 The area of this right angled triangle is $40cm^2$.
Calculate the height of the triangle.

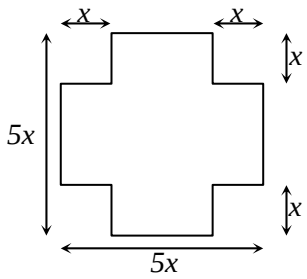


.....

.....

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

19 Four squares are cut from a big square to make the following shape.



a) i) Find the perimeter of this shape.

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

ii) Find the area of this shape. .....

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

A triangle is constructed as shown.

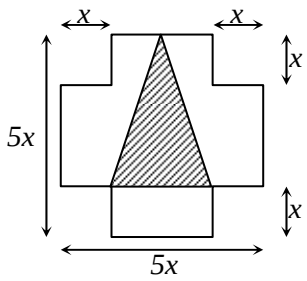
b) Calculate the area of the shaded triangle.

.....

.....

.....

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



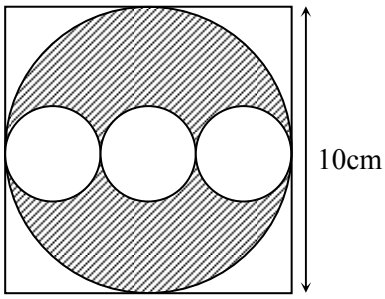
A student says that the perimeter of the triangle is $11x$.

c) Do you agree with them? Justify your answer.

.....

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

20 The diagram shows some circles inside a square of side 10cm.
Calculate the shaded area using $\pi = 3.14$.



.....

.....

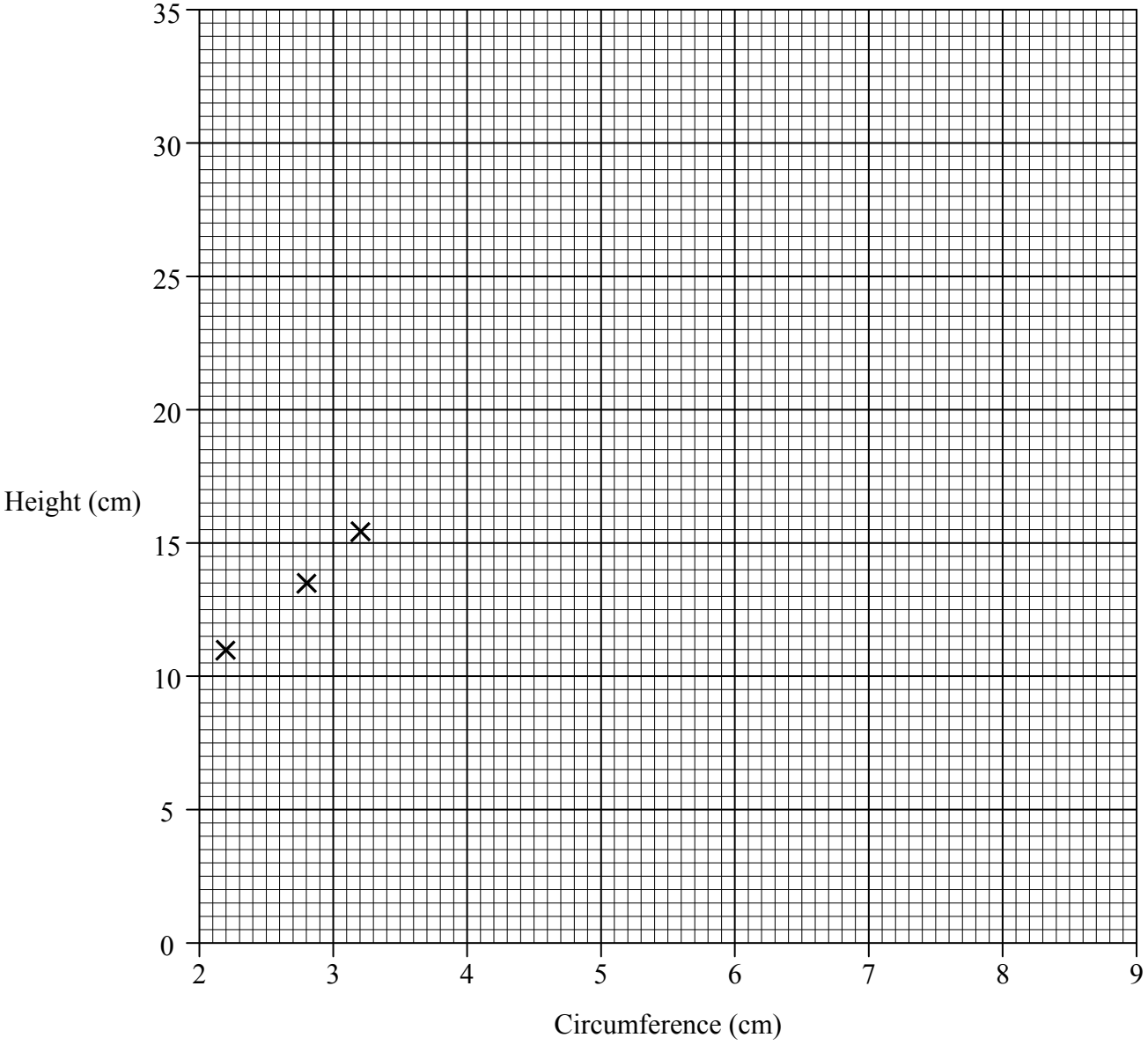
.....

.....Answer..... cm^2 [6]

21 The height of a particular type of plant is compared to the circumference around its stalk.

Circumference in cm	2.2	2.8	3.2	3.4	4.0	5.0	5.5	6.0
Height in cm	11.0	13.5	15.5	18.5	20.0	26.0	30.0	31.0

a) Complete the scatter diagram for the information in the table. [2]



b) i) Draw a line of best fit on the scatter diagram. [1]

Another plant of the same type has a height of 23.0cm.

ii) Estimate from your line the circumference of the stalk of this plant.

Answer ..... [1]

c) A student has grown a plant of the same type that is 100cm high. Explain why it might not be wise to use the information in the table or from the graph to estimate the circumference of this plant's stalk.

.....

..... [1]