



ENTRANCE EXAMINATION

MATHEMATICS

Sample Paper 2

Time allowed: 45 minutes

- There are 26 questions. Answer as many as you can.
- Write your answers in the spaces provided.
- Show any working in the spaces between the questions.
- If you cannot answer a question, go on to the next one. Return to it later if you have time.
- Check your work if you finish early
- Calculators may **not** be used.

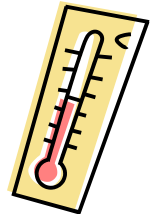
Do not open this paper until you are told to do so.

1. Circle all numbers that are bigger than 0.45

0.5 0.6 0.4 0.08 0.404

2. Over the Christmas holidays this year the maximum temperature at a teacher's house was 7.20 degrees Celsius.

The temperature has now **fallen** by 3.15 degrees, what is the temperature?



Answer.....

3. Calculate the following **showing your working out clearly**.

(a) $11.36 + 3.40$

Answer.....

(b) $3.54 - 2.34$

Answer.....

(c)
$$\begin{array}{r} 213 \\ \times 17 \\ \hline \end{array}$$

Answer.....

(d) 844×0.25

Answer.....

4. (a) Divide 911 by 6 giving your answer and the remainder.

Answer.....

Remainder.....

(b) Write one number that fits all three of these statements.

The number is a
multiple of 4

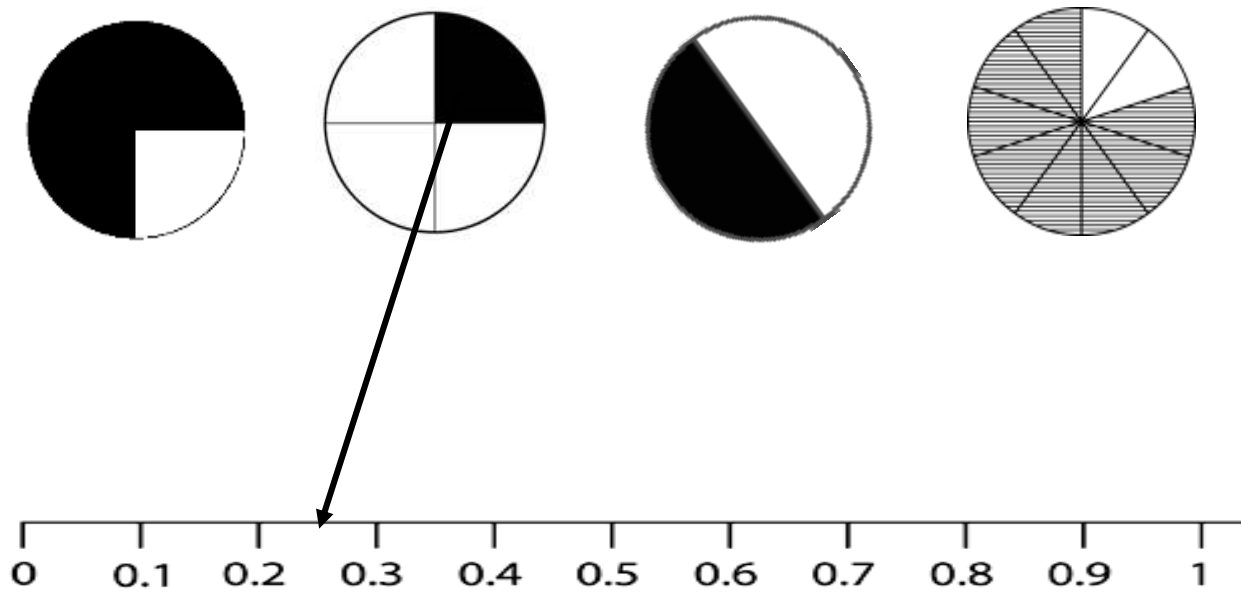
The number is a
multiple of 6

The number ends in 2

Answer.....

5. A fraction of each circle has been shaded.

Match the fraction to the correct place on the number line. One has been done for you.



6. (a) Round 4.2 to the nearest whole number.

Answer.....

(b) Round 37456 to the nearest hundred.

Answer.....

7. Here are four number cards

2

8

6

3

(a) Use all four number cards to make this sum correct.

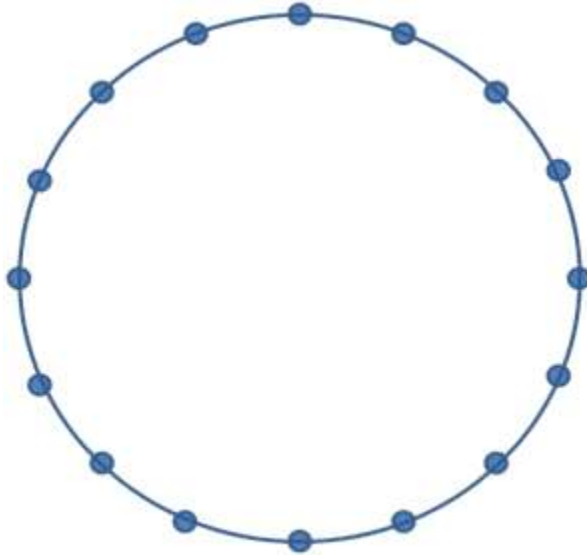
$$\square \square + \square \square = 100$$

(b) Write any numbers in the next boxes so that the calculation below is true..

$$7 \times \square = \square - 7$$

8. The 16 points on this circle are equally spaced. Join 4 points to make a square.

You may use a ruler.



9. Write these fractions in order of size from smallest to the largest.

$$\frac{5}{8} \quad \frac{2}{3} \quad \frac{1}{2} \quad \frac{7}{12} \quad \frac{17}{24}$$

Smallest **Largest**

10. (a) Write down the next two terms of this sequence of numbers.

2 8 14 20

Answer.....

(b) What is the 50th term of this sequence of numbers?

6 11 16 21 26

Answer.....

(c) Here is another number sequence.

90 99 108 117 126 135

Circle all the following numbers that would be in this number sequence.

200 2007 163 918 45

11. (a) At a supermarket 3 kilograms of apples costs £12.

How much does 18 kilograms of apples cost?

Answer.....

(b) At the same supermarket 10 kilograms of oranges costs £14.

How much does 4 kilograms of oranges cost?

Answer.....

(c) 3 fully open taps fill up a bath in 60 seconds.

How long will 2 fully open taps take to fill up the same bath?

Answer.....

12. Phil holds a bag containing 16 blue sweets and 4 red sweets.



(a) What **percentage** of sweets in this bag are red?

Answer.....%

Phil now eats 4 of the blue sweets.

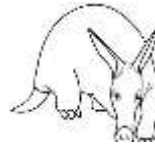
(b) What **fraction** of the sweets in the bag are now blue?

Answer.....

13. Four numbers A, B, C and D have been written out as a fraction, a decimal and a percentage.
Complete the table giving fractions in their simplest form.

	Fraction	Decimal	Percentage
A	$\frac{1}{5}$	0.2	20%
B	$\frac{4}{5}$		
C			83%
D		0.08	

14. One Aardvark weighs the same as 20 Squirrels.



One Tapir weighs the same as 4 Aardvarks.



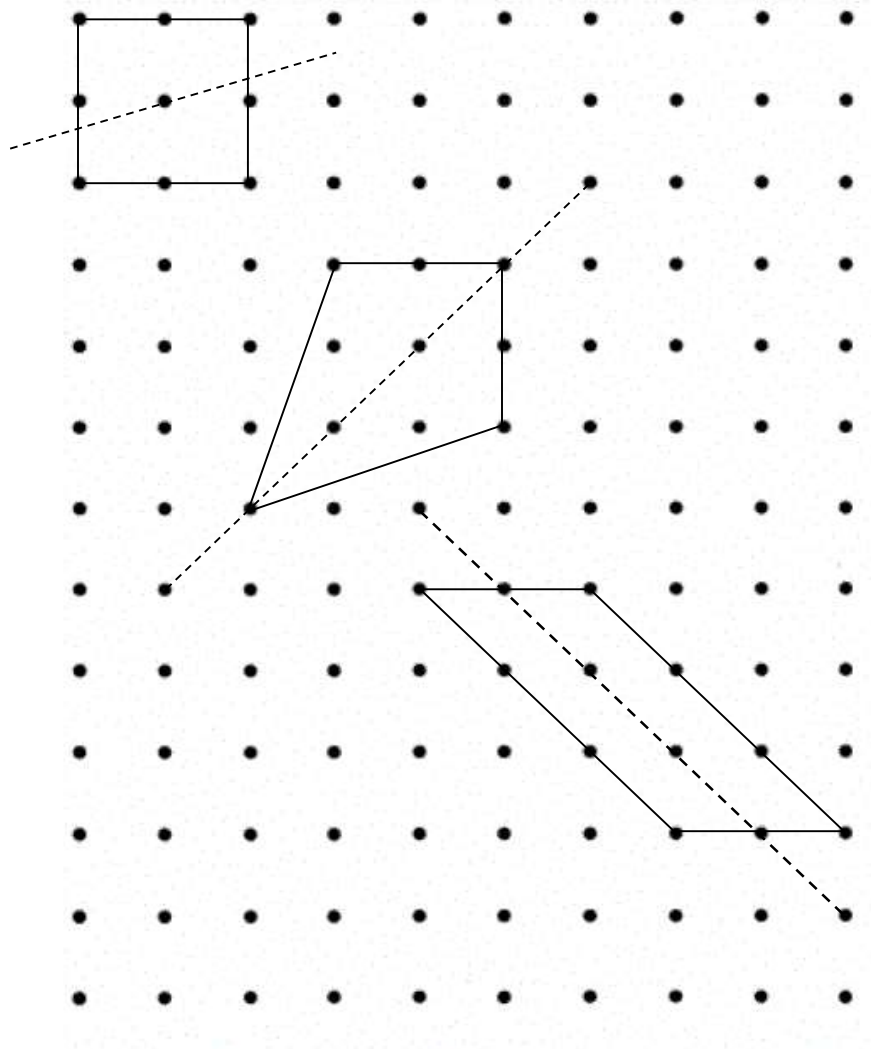
How many Squirrels weigh the same as 3 Tapirs?



Answer.....

15. Here are 3 four sided shapes drawn on a square grid.

Put a tick next to each shape if the line drawn on it is a line of symmetry.



16. Rose is making a lemon cake. Part of the recipe for the cake mix is below.

$\frac{1}{4}$ of the cake mix is sugar
 $\frac{1}{2}$ of the cake mix is flour
 $\frac{1}{12}$ of the cake mix is lemons



The rest of the cake mix is made from other ingredients.

If there are 900 grams of cake mix

(a) How many grams of sugar are there?

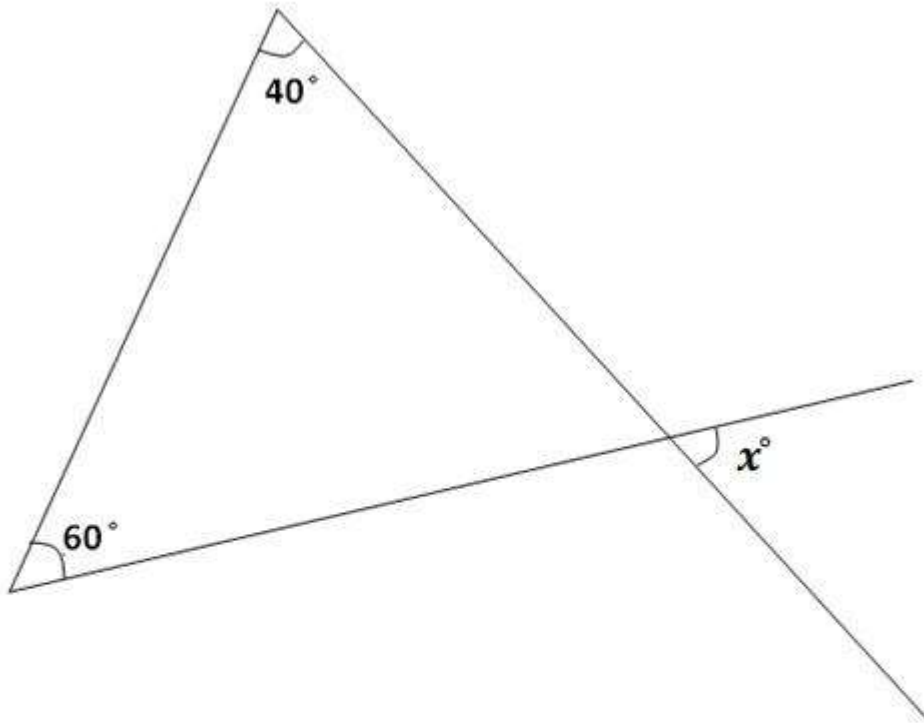
Answer.....g

(b) How many grams of ingredients other than lemons, flour and sugar are there?

Answer.....g

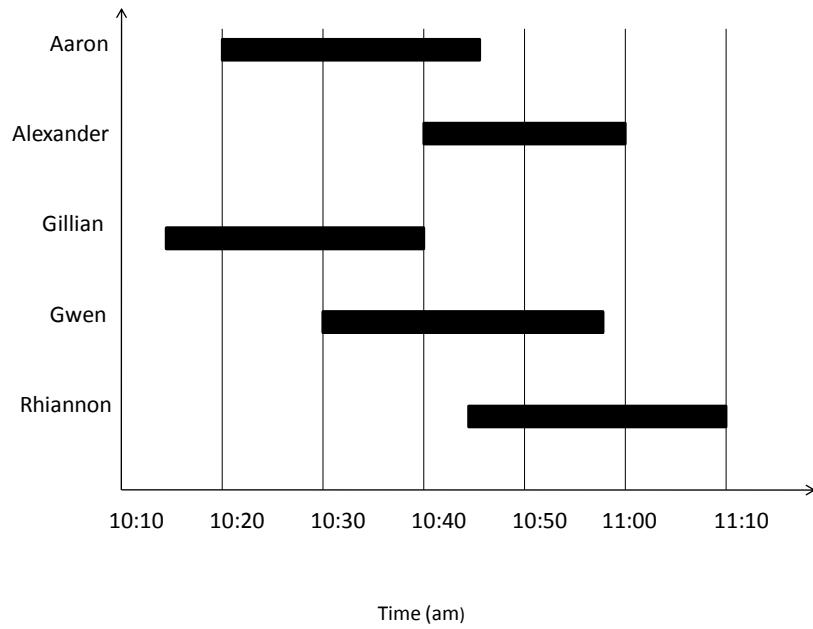
17. Work out the value of the angle labelled x in the diagram below.

The diagram is not drawn to scale.



Answer.....

18. This chart shows the times when 5 children were visiting Chester Zoo one afternoon.



(a) Who arrives the **earliest** out of the 5 children?

Answer.....

(b) Who spent the **shortest time** at the zoo?

Answer.....

19. A group of five Removes pupils were asked to give the film ‘Toy Story 3’ a mark out of 10.

The marks they gave were as follows

10 8 10 10 7



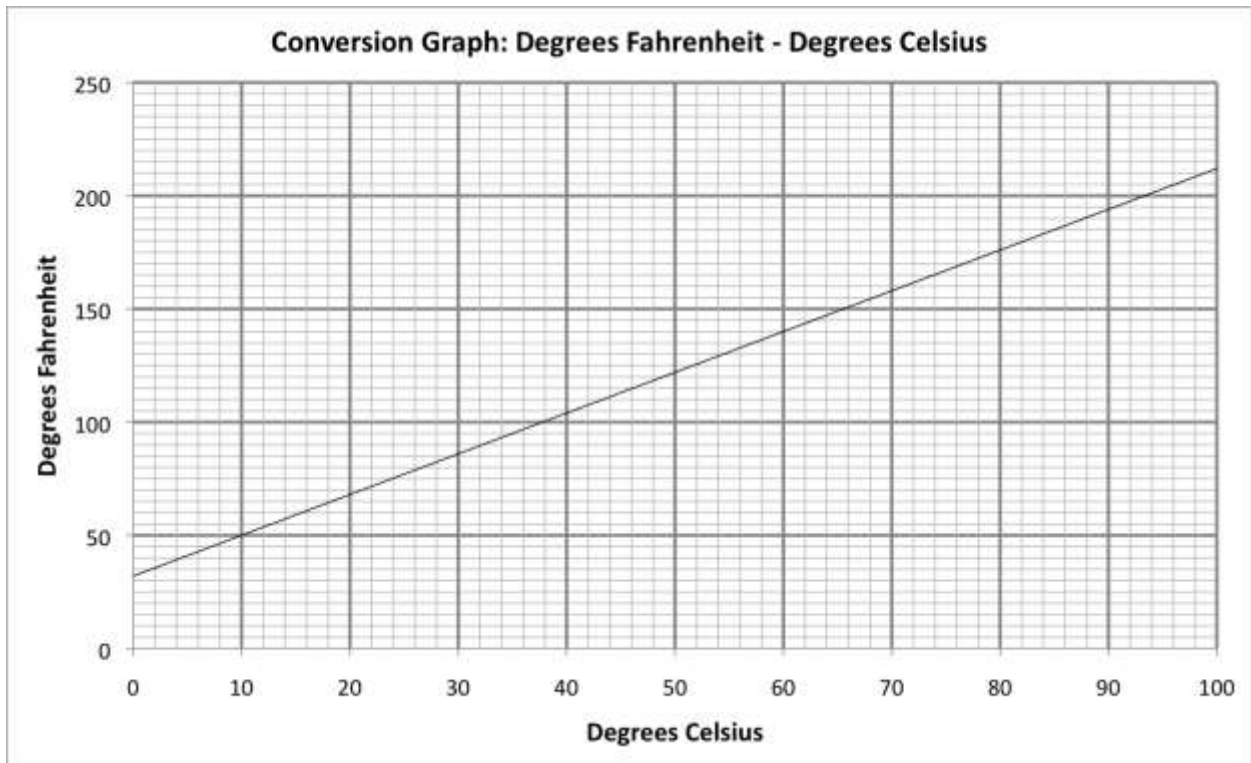
(a) If I pick one of the pupils at random. What is the probability that they have given the film a score of 10? Give your answer as a fraction.

Answer.....

(b) What is the mean average score out of 10 for this group?

Answer.....

20. The graph below converts degrees Celsius to degrees Fahrenheit.



Use the graph to complete the following sentences.

(a) 74 degrees **Celsius** is the same as degrees **Fahrenheit**.

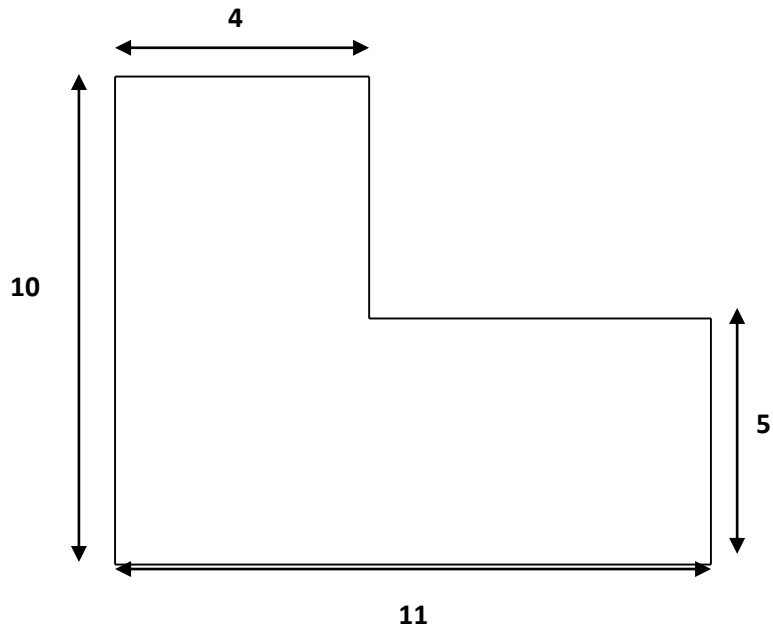
Answer.....

(b) 120 degrees **Fahrenheit** is the same as degrees **Celsius**.

Answer.....

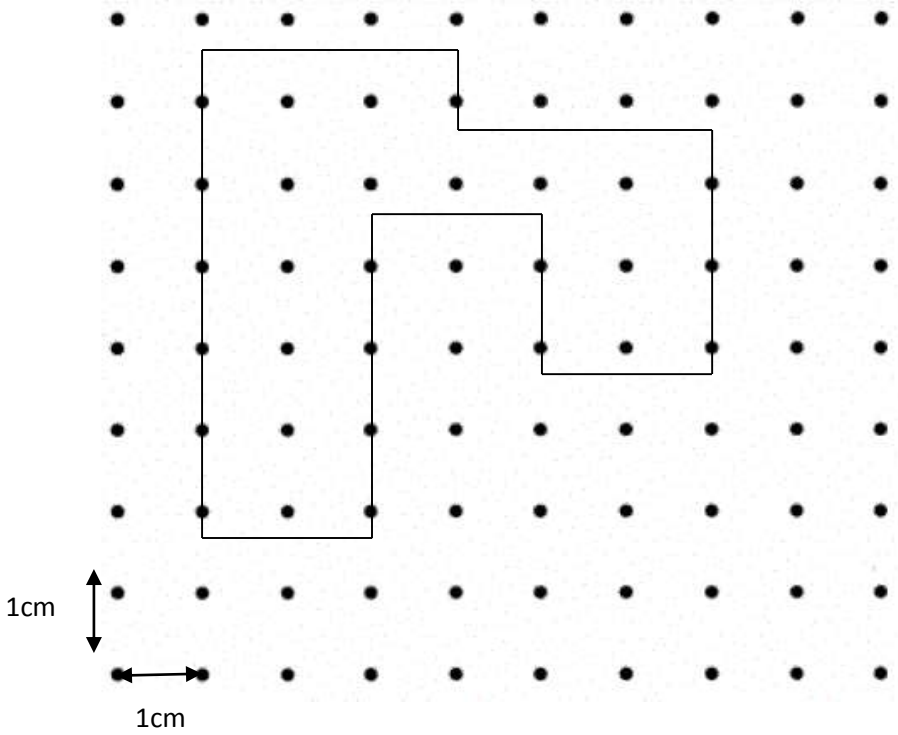
21. (a) Calculate the area of the following shape which is made from rectangles.

The shape is not drawn to scale.



Answer.....

- (b) Calculate the perimeter (the length around the **outside**) of the following shape.
Each small square is 1cm by 1cm.



Answer.....

22. At 'Canty's Candy Shop' the following prices are charged.

3 Mars bars and 1 Crunchie bar costs £1.90.
1 Mars bar and 1 Crunchie bar costs 90 pence.

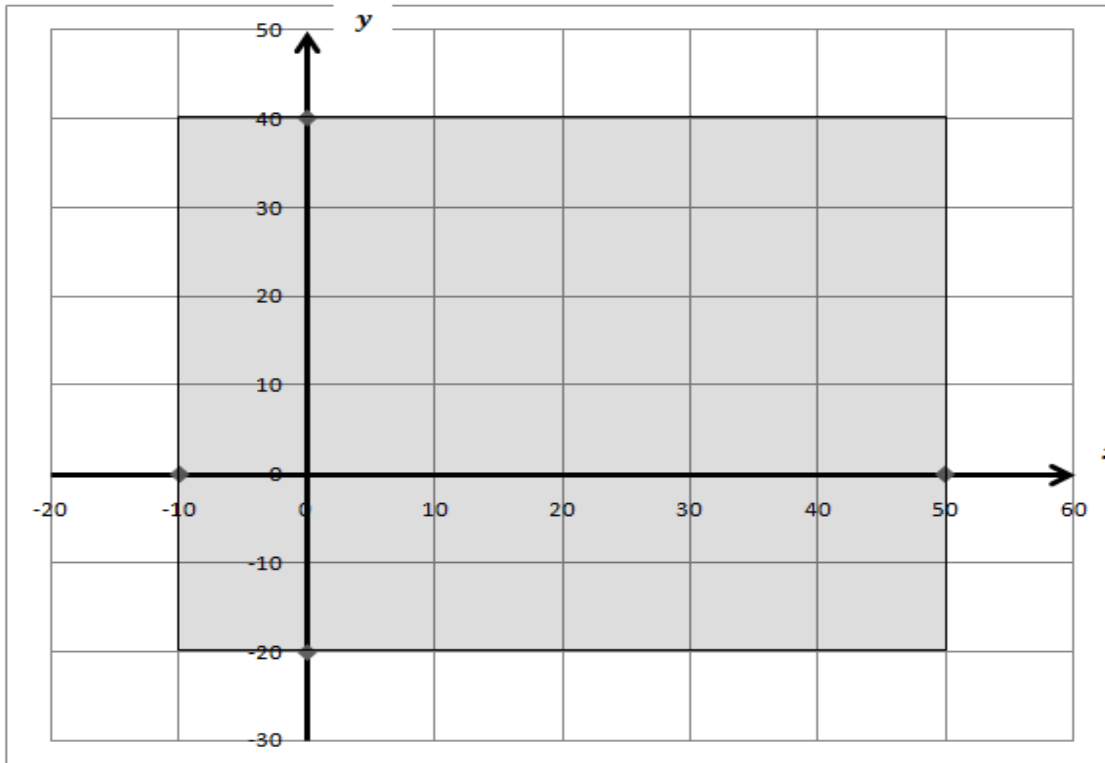
(a) How much will 2 Mars bars cost?

Answer.....

(b) How much will 3 Crunchie bars cost?

Answer.....

23. Here is a shaded rectangle on x and y axes.



For each of the co-ordinates (points on the graph) shown in the table below, put a tick to show if it is inside or outside the shaded square. One has been done for you.

		INSIDE	OUTSIDE
A	(20, 30)	✓	
B	(30, -10)		
C	(-20, -20)		
D	(45, 60)		
E	(-5, 35)		

24. A milk crate contains 4 rows and 6 columns. It is shown below. A milkman needs to deliver exactly 18 bottles.

Complete this grid and find a way to fit the bottles in so that every row and column has an even number of bottles; 0, 2, 4 and 6 are even numbers.

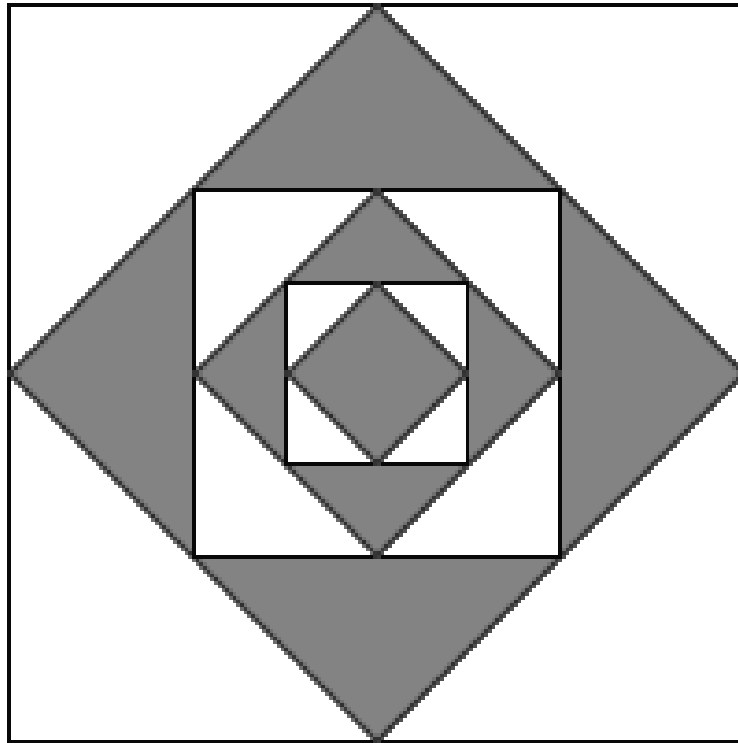
This example **won't** work as the third and fourth rows have 3 bottles in them.

There are 3 in this row →

O	O	O	O	O	O
O	O	O	O	O	O
O	O				O
O	O				O

Put your answer in the crate drawn below

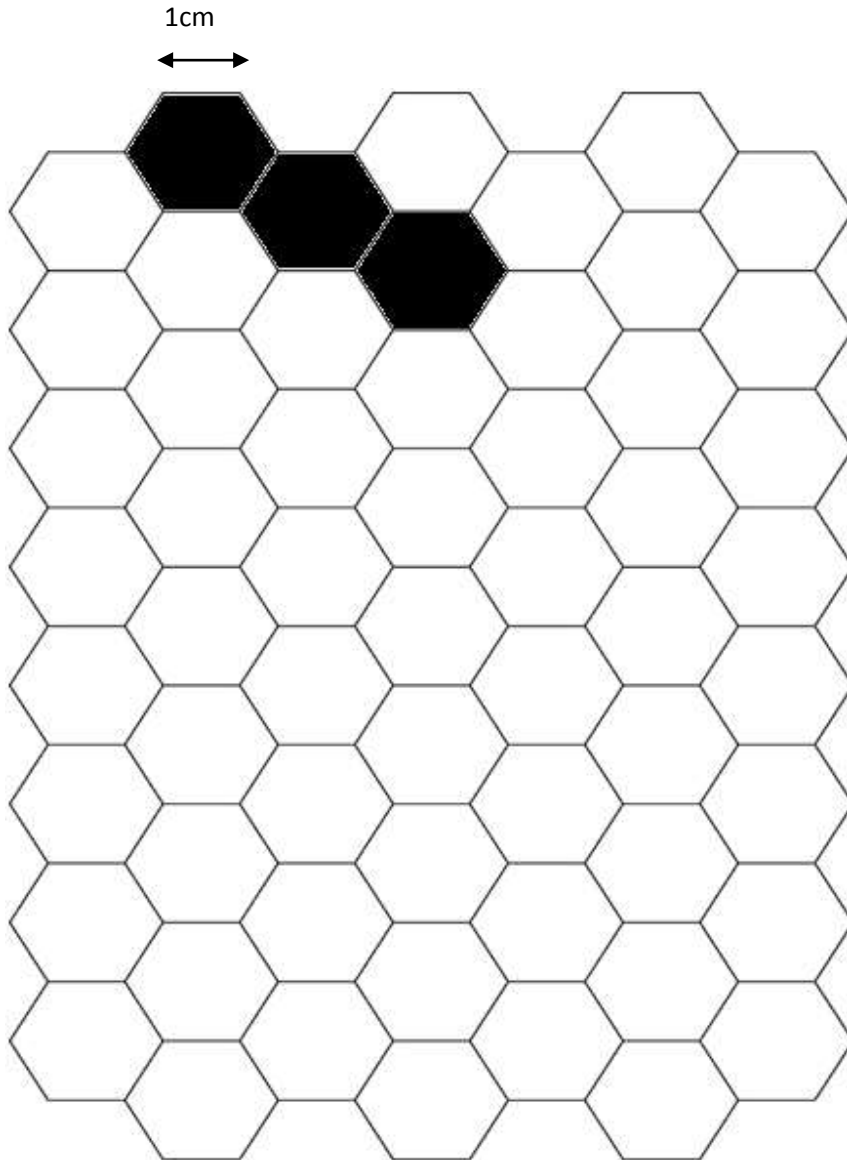
25. These are called nested squares. What fraction of this shape is shaded in?



Answer.....

26. The shaded shape has an area of 3 hexagons and a perimeter of 14cm.

Draw and shade in another shape which has an area of 4 hexagons and a perimeter of 14cm.



END OF EXAMINATION