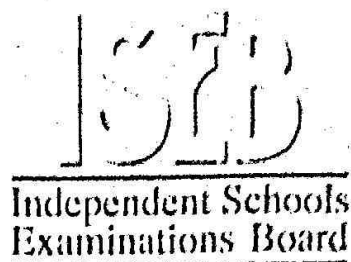


SURNAME .....  
(Block capitals, please)  
JUNIOR SCHOOL .....

FIRST NAME .....  
SENIOR SCHOOL .....



## COMMON ENTRANCE EXAMINATION AT 11+

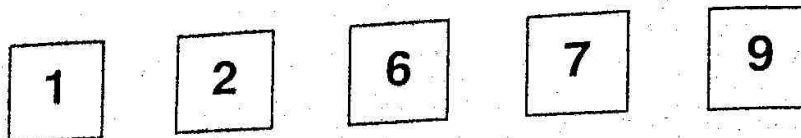
# MATHEMATICS

Practice Paper 2006–2007

Please read this information before the examination starts.

- This examination is 60 minutes long.
- Please try **all** the questions.
- Write your answers on the dotted lines.
- All working should be written on the paper.
- Calculators are not allowed.

1. Here are some number cards:



You can use some of the cards to make the number 972 like this:

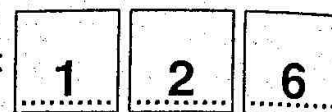


You can only use each card **once** in each answer.

Pick any three cards to make the following:

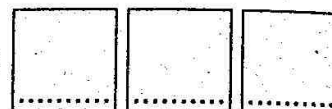
**Example: smallest number**

Answer:



(i) largest number

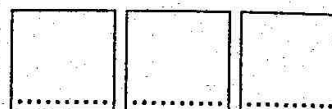
Answer:



(1)

(ii) largest odd number

Answer:



(1)

(iii) smallest odd number

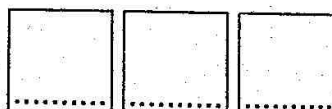
Answer:



(1)

(iv) number closest to 700

Answer:



(1)

(v) a number divisible by 3

Answer:



(1)

2. 273 children visited a model railway exhibition.  
Round this number

(i) to the nearest ten



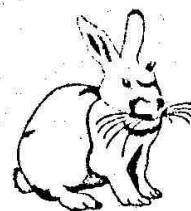
Answer: ..... (1)

(ii) to the nearest hundred.

Answer: ..... (1)



3. Katie has eight pets.  
Two are rabbits and the rest are goldfish.



(i) What fraction of the pets are rabbits?

Answer: ..... (1)

(ii) What percentage of the pets are goldfish?

Answer: .....% (1)

(iii) She sells 50% of the goldfish.  
How many pets does she now have?

Answer: ..... (2)

4. John grew a sunflower.  
In July, it was 1.65 m tall.  
When he measured it in August, it had grown by 48 cm.

(i) How tall was it in August?

Answer: ..... cm (2)

(ii) Roughly, what is this height in feet?

Answer: ..... feet (1)

Turn over





5. Write the missing number which will make each statement correct.

(i)  $48 + 17 = 28 + ?$

Answer: ..... (1)

(ii)  $38 - 17 = 28 - ?$

Answer: ..... (1)

(iii)  $30 \times 10 = 3 \times ?$

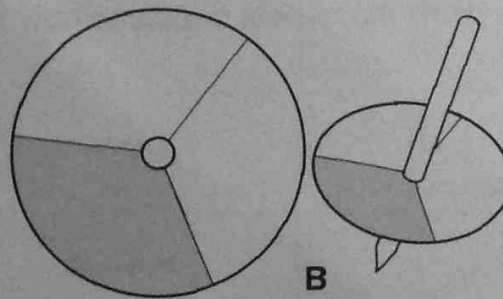
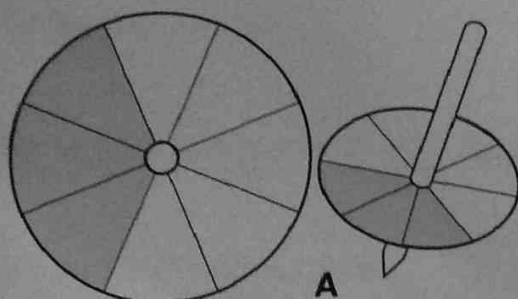
Answer: ..... (1)

(iv)  $6000 \div 100 = 600 \div ?$

Answer: ..... (1)

6. (i) Paula has two fair spinners.

Which spinner is more likely to land on grey?



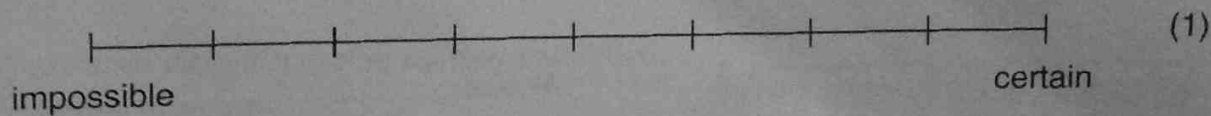
Answer: ..... (1)

(ii) There are 5 green and 3 red counters in a bag.

Ben picks a counter from the bag.



(a) Mark with an arrow the probability that Ben picks a red counter.



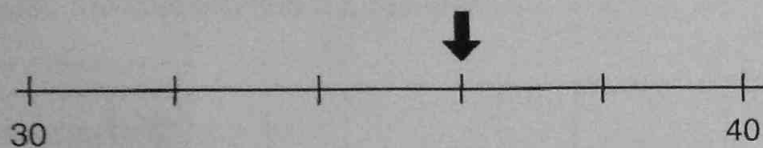
Ben puts the counter back into the bag.

(b) What counters could be added to the bag so that he has an even chance of picking red?

Answer: ..... (1)

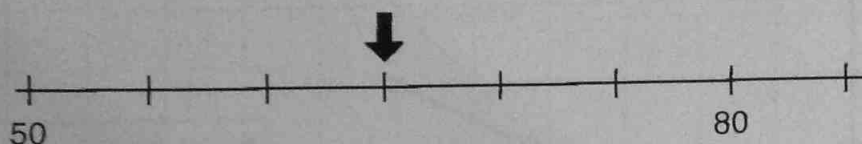
7. Write the numbers indicated by the arrows on these scales.

(i)



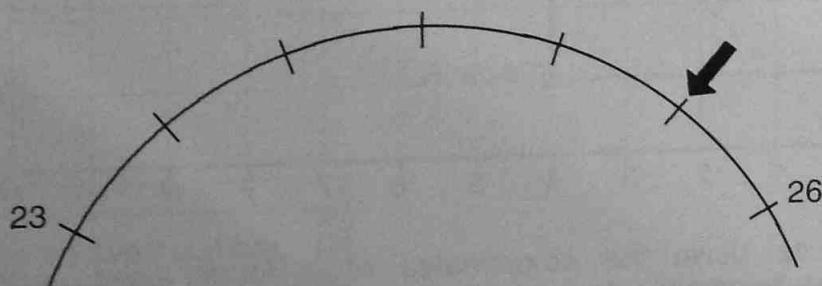
Answer: ..... (1)

(ii)



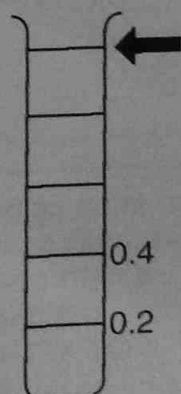
Answer: ..... (1)

(iii)



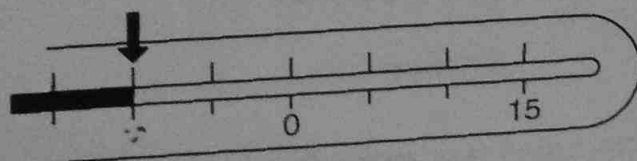
Answer: ..... (1)

(iv)



Answer: ..... (1)

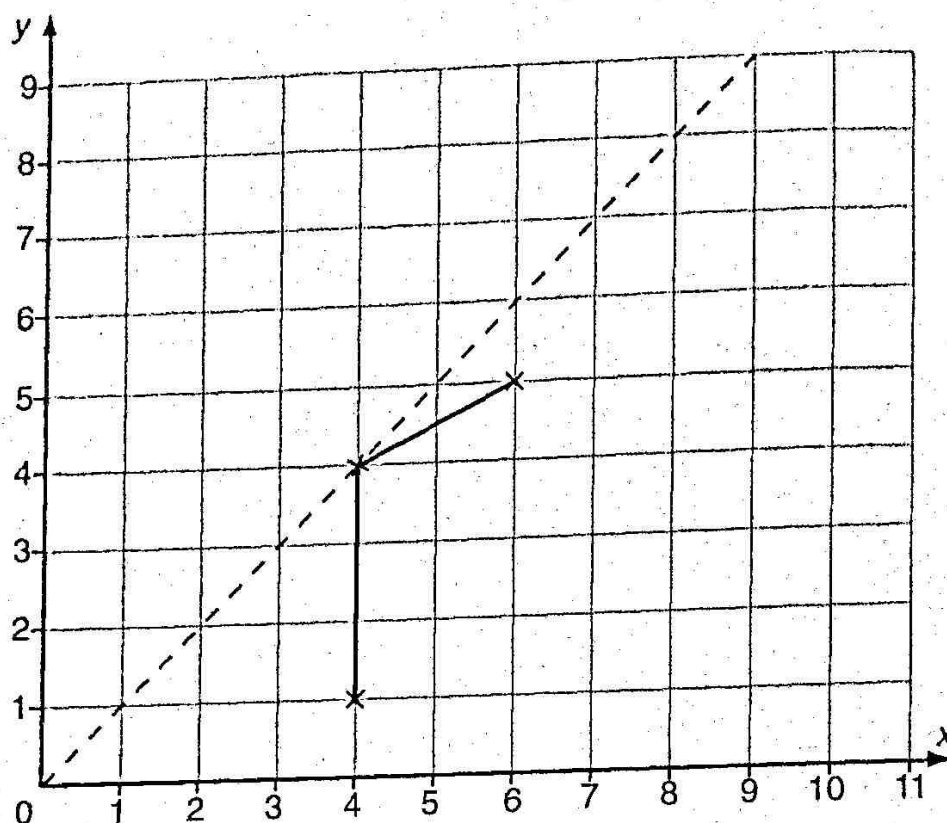
(v)



Answer: ..... (1)

Turn over

8. Three points are plotted on the centimetre grid below.



- (i) (a) Write down the co-ordinates of a fourth point, such that a parallelogram is formed when the four points are joined.

Answer: (....., ..... ) (1)

- (b) Plot this point and complete the parallelogram.  
Label your shape **A**.

- (c) What is the area of **A**?

Answer: .....  $\text{cm}^2$  (1)

- (ii) (a) How many lines of symmetry has **A**?

Answer: ..... (1)

- (b) What is the order of rotational symmetry of **A**?

Answer: ..... (1)

- (iii) Reflect **A** in the dashed line. Label your shape **B**.

- (iv) Translate **A** 3 squares to the right and 2 squares up. Label your shape **C**.



9. Each of these boxes contains a whole number.  
For each box, use the clues to find the number.

(i)

- If you subtract 4 from me, the result is 11

Answer: ..... (1)

(ii)

- If you double me and add 7, the result is 23

Answer: ..... (1)

(iii)

- I am an even number.
- I am less than 20
- I am a factor of 48
- I am a cube number.

Answer: ..... (2)

(iv)

- I am a 2-digit number.
- I am a prime number.
- I am 1 more than a square number.
- If you add my digits, the result is 8

Answer: ..... (2)

Turn over

10. Here are some numbers:

12

1

17

2

13

(i) Which number is a square number?

Answer: ..... (1)

(ii) Which number is a multiple of 4?

Answer: ..... (1)

(iii) What fraction of the numbers are prime?

Answer: ..... (1)

(iv) What is the median number?

Answer: ..... (2)

(v) What is the mean of the numbers?

Answer: ..... (2)



11. Six friends carry out a rainfall survey.

They collect rainwater for one week in identical bowls placed in their gardens.

Here are their results:

name	amount of rainfall
Andy	1.2 litres
Cath	860 millilitres
Nick	0.78 litres
Paul	1.03 litres
Sarah	0.463 litres
Tom	0.48 litres

(i) Write Cath's result in litres.

Answer: ..... litres (1)

(ii) Whose garden had the most rain?

Answer: ..... (1)

(iii) Whose garden had the least rain?

Answer: ..... (1)

(iv) How much more rainfall did Andy have than Paul?

Answer: ..... litres (2)

(v) Andy thinks his garden had more rain than Tom's and Nick's together.

(a) Find the total amount of rain for Tom and Nick.

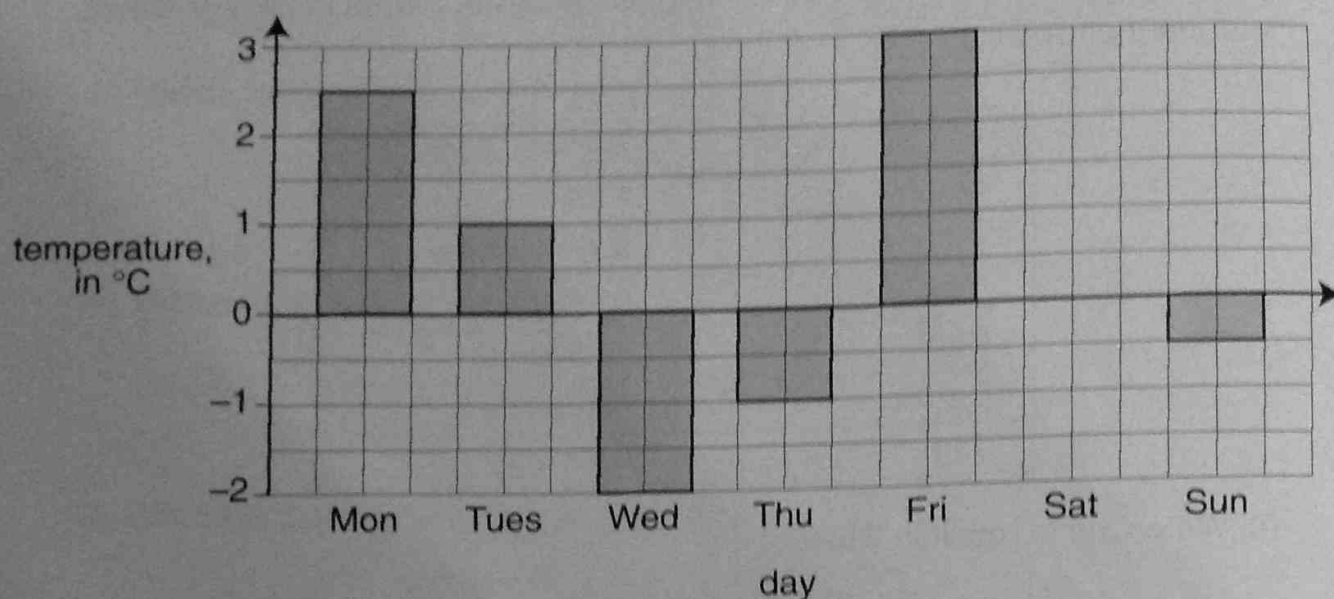
Answer: ..... litres (2)

(b) Is Andy correct?

Answer: ..... (1)

Turn over

12. Below is a graph showing the temperature at 22:00 each day for one week.



(i) On Saturday, the temperature was 2 °C.

Complete the graph to show this.

(1)

(ii) Find the range of the temperatures recorded in the week.

Answer: .....°C (1)

(iii) On how many days was the temperature less than 0 °C?

Answer: ..... (1)

(iv) Which two consecutive days had the largest difference in temperature?

Answer: ..... and ..... (1)



13. (i) Draw accurately triangle  $PQR$  in which

$$PQ = 10 \text{ cm}$$

$$PR = 7 \text{ cm} \quad \text{and}$$

$$\text{angle } QPR = 35^\circ$$

The point  $P$  is already drawn for you.



(3)

(ii) Measure the obtuse angle  $R$ .

Answer: .....<sup>°</sup> (1)

14. (i) What is seventeen more than three thousand and ninety four?

Answer: ..... (2)

(ii) What is four point zero one minus zero point three?

Answer: ..... (2)

Turn over

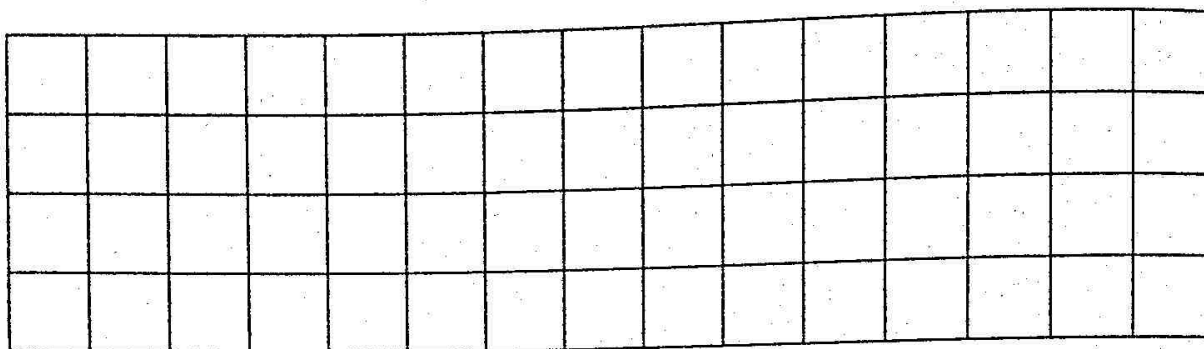


15. Laura is investigating shapes with area  $12 \text{ cm}^2$ .

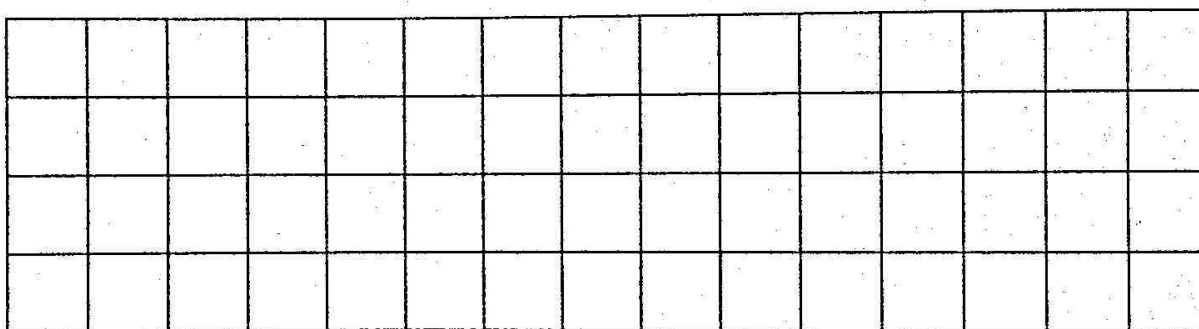
She has not yet investigated rectangles. The lengths of the sides must be whole numbers.

(i) On each grid below, draw a **different** rectangle with an area of  $12 \text{ cm}^2$ .

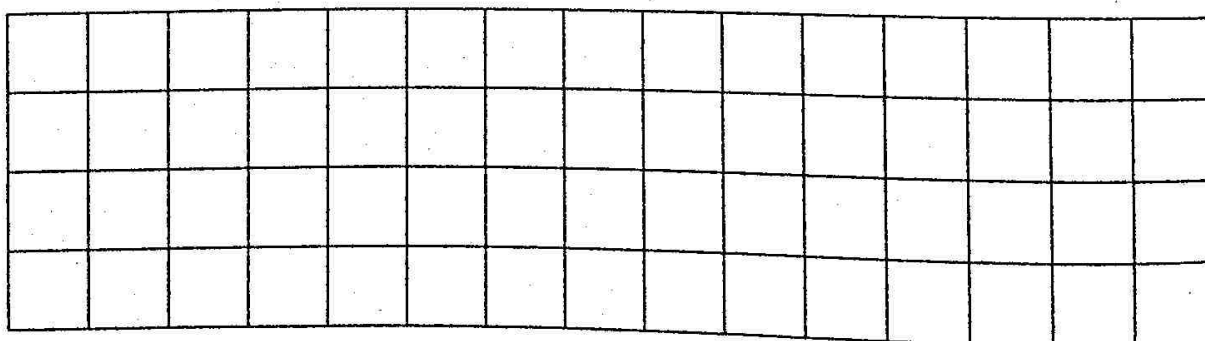
Write its perimeter on the line underneath the grid.



perimeter: ..... cm



perimeter: ..... cm



perimeter: ..... cm (6)

(ii) Add your results to Laura's tally table and fill in the frequency column.

perimeter (cm)	tally	frequency
10 to 14		
15 to 19		
20 to 24		
25 to 29		

(3)

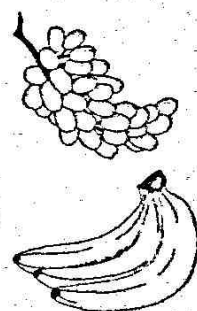
(iii) Which is the modal class?

Answer: ..... (1)

16. 20 children were asked whether they liked bananas and grapes.

Here are the results:

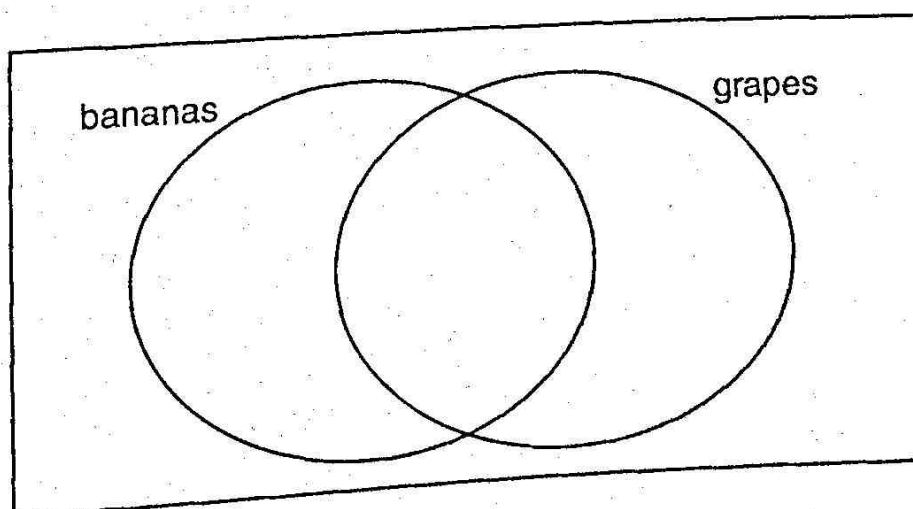
- Everyone liked at least one of the fruits.
- 12 children liked bananas.
- 13 children liked grapes.



(i) How many children liked both bananas and grapes?

Answer: ..... (1)

(ii) Complete the Venn diagram by writing the numbers of children in the correct regions.

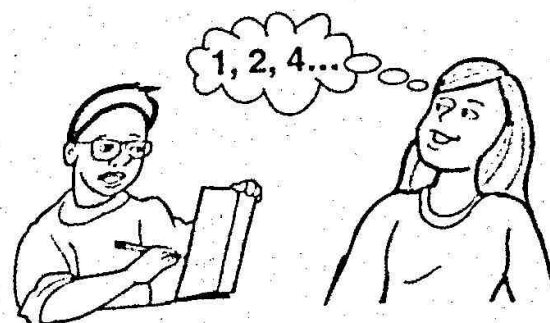


(2)

Turn over



17. Julie and Tom are playing a game.



Julie thinks of a rule for a number sequence and tells Tom the first three numbers.

These are: **1 2 4...**

Tom has to try to guess Julie's rule.

(i) (a) Write down a possible rule which Tom could guess.

Answer: ..... (1)

(b) Write down the next two terms for this rule.

Answer: ..... , ..... (2)

Tom thinks of another possible rule for Julie's sequence.

(ii) (a) Write down a different rule Tom could give.

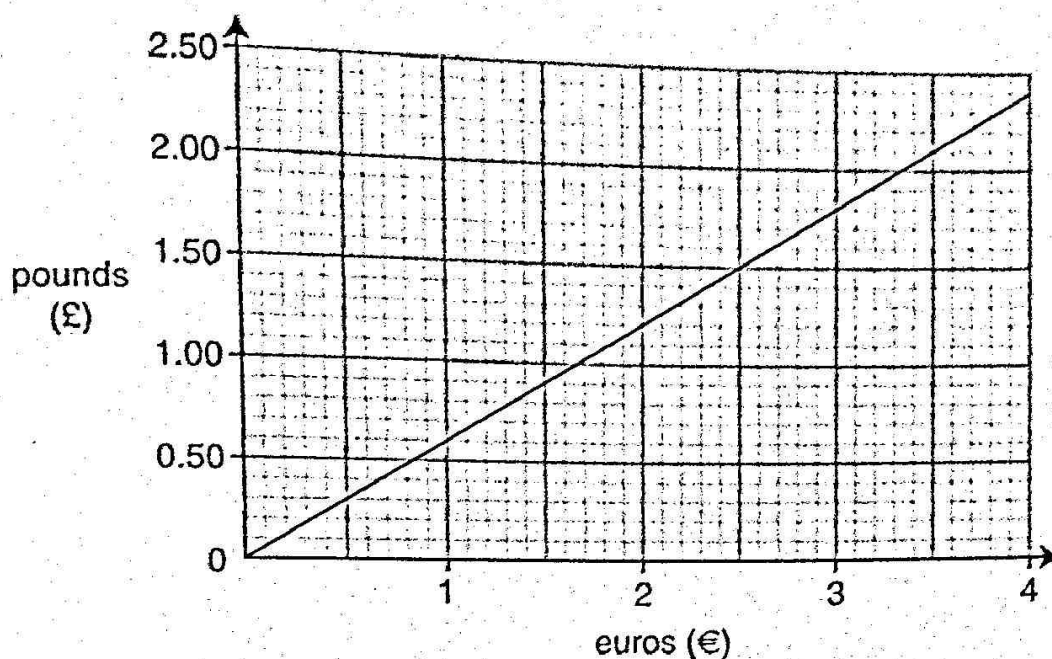
Answer: ..... (1)

(b) Write down the next two terms for this rule.

Answer: ..... , ..... (2)



18. Here is a graph showing how you can convert between pounds (£) and euros (€).



- (i) Use the graph to work out the cost, in euros, of a pen costing £1.80

Answer: € ..... (1)

- (ii) Roger is on holiday in France.

He wants to buy an ice cream which costs 1.50 euros.

- (a) How much would six ice creams cost in euros?

Answer: € ..... (1)

- (b) Use the graph to convert the cost of one ice cream into pounds.

Answer: £ ..... (1)

- (iii) At the end of his holiday, Roger has 35 euros left.  
Use the graph to work out what this is worth in pounds.  
Show your working clearly.

Answer: £ ..... (3)

Turn over

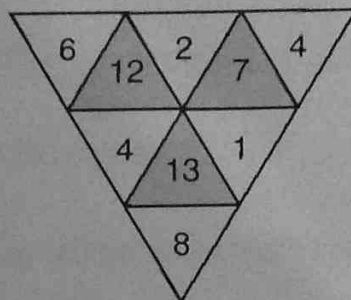


19. Bob has 3 times as many sweets as Cath.  
Cath has 9 fewer than Al.  
If Al has 26, how many does Bob have?

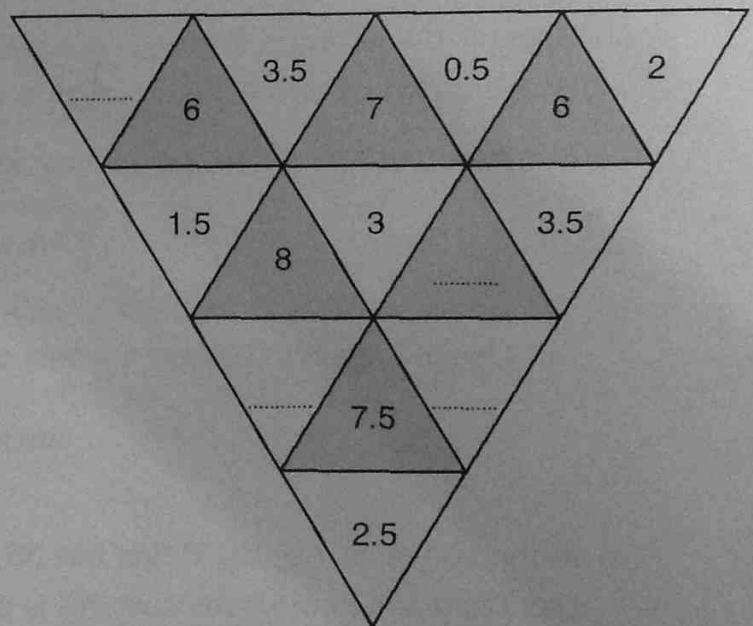
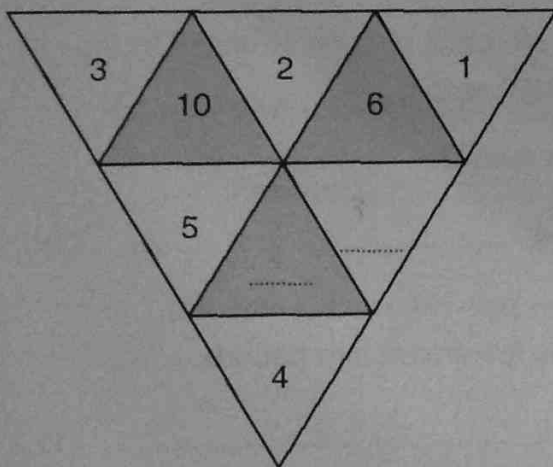
Answer: ..... sweets (2)

20. In the following puzzles, the number inside the shaded triangle is equal to the total of the numbers inside the triangles which touch its edges.

For example:



Fill in the missing numbers in the triangles below.



(6)

(Total Marks : 100)