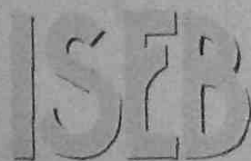


SURNAME .....

FIRST NAME .....

JUNIOR SCHOOL .....

SENIOR SCHOOL .....



Independent Schools  
Examinations Board

## COMMON ENTRANCE EXAMINATION AT 11+

# MATHEMATICS

Monday 18 January 2010

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.
- Tracing paper may be used.
- Calculators are not allowed.

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1) CGP KS2 maths targeted question book level 5

2) year 6

i) CGP KS2 study book

ii) year 6 CGP maths workout levels 4-5



Common Question:

1 Sandwich and cup of tea cost £2.20

2 sandwiches and a cup of tea cost £3.90

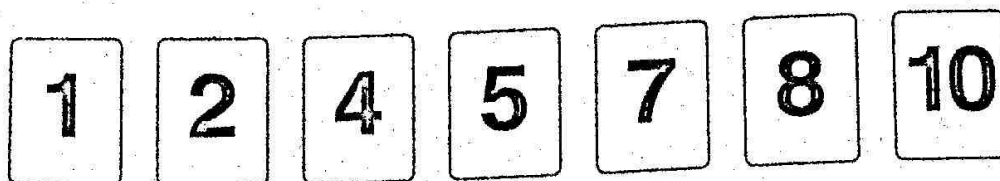
How much does a cup of tea cost?

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Ans. 1 sandwich = £1.70

→ tea = 50 p

1. Here is a set of number cards:



Without using any card twice, write down from this set of number cards

(i) the product of 2 and 5

Answer: ..... (1)

(ii) the smallest prime number

Answer: ..... (1)

(iii) a multiple of 4

Answer: ..... (1)

(iv) two numbers whose sum is a square number

Answer: ..... and ..... (2)

2. (a) Calculate

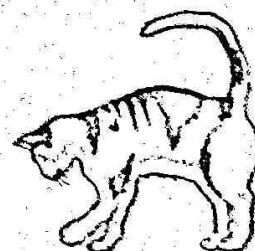
(i)  $354 + 87$

Answer: ..... (2)

(ii)  $354 - 87$

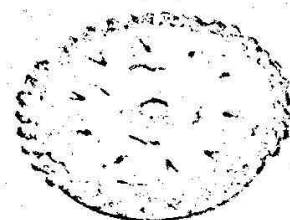
Answer: ..... (2)

- (b) Molly, the cat, eats 130 grams of cat food each day.  
How many grams of cat food does she eat in 7 days?



Answer: ..... g (2)

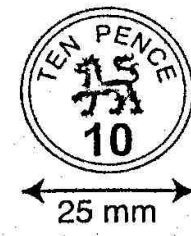
- (c) Rupert spends £5.28 on 4 identical fruit pies.  
Calculate the cost of one of these fruit pies.



Answer: £ ..... (2)



3. A 10-pence coin has a diameter of 25 mm.



not to size

100 of these coins are put side by side in a line.



(i) (a) How long is the line of coins, in millimetres?

Answer: ..... mm (1)

(b) Write your answer to (i) (a) in metres.

Answer: ..... m (1)

(ii) What is the total value of all of the coins in the line?

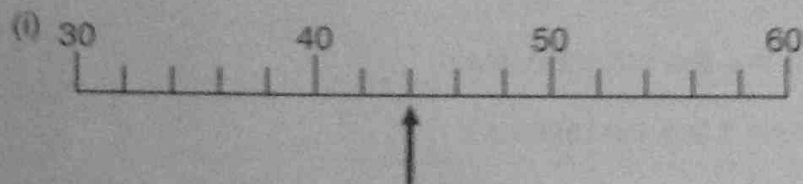
Answer: £ ..... (2)

13 children each collect 100 of these 10-pence coins for charity.

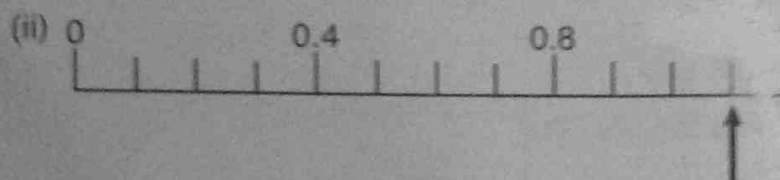
(iii) How much do they collect altogether?

Answer: £ ..... (1)

4. (a) Write down the number shown by each arrow.

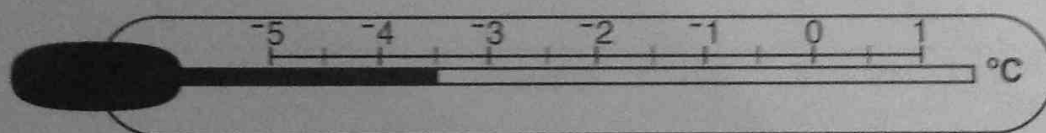


Answer: ..... (1)



Answer: ..... (1)

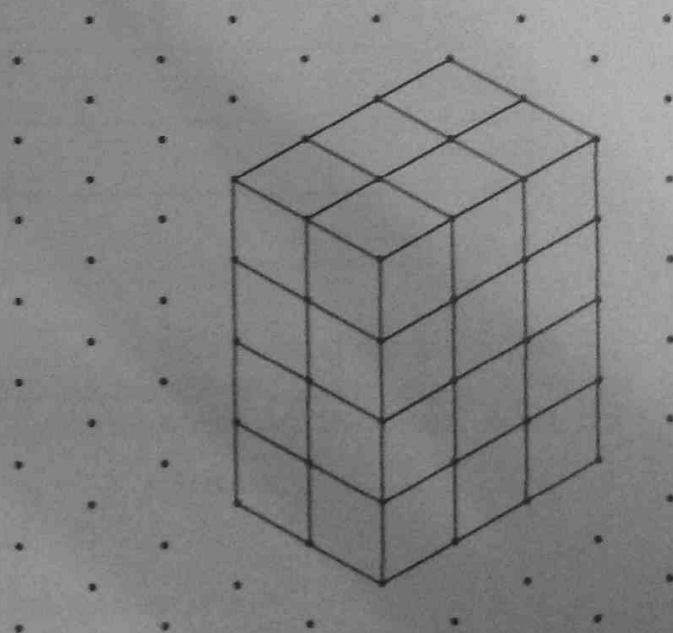
(b) Write down the temperature shown on this thermometer.



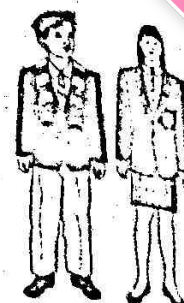
Answer: ..... °C (1)

5. Calculate the volume of this cuboid.

Each small cube has a volume of  $1 \text{ cm}^3$ .



Answer: .....  $\text{cm}^3$  (2)



6. Karl is doing a survey about school uniform.  
There are 50 children in Year 4.  
60% of the children in Year 4 like the school uniform.
- (i) How many children in Year 4 like the uniform?

Answer: ..... (2)

In Year 5, there are 40 girls and 24 boys.  
 $\frac{1}{2}$  of the girls and  $\frac{2}{3}$  of the boys like the uniform.

- (ii) How many children in Year 5 like the uniform?

Answer: ..... (3)

Karl asks everyone in Year 6 whether they like the school uniform.  
This table gives some information about his results:

	likes the uniform	does not like the uniform	total
class 6A	18		30
class 6B		8	24
class 6C	11		
total		35	80

- (iii) Complete the table.

(3)

- (iv) What fraction of the children in class 6B do not like the uniform?

Answer: ..... (1)

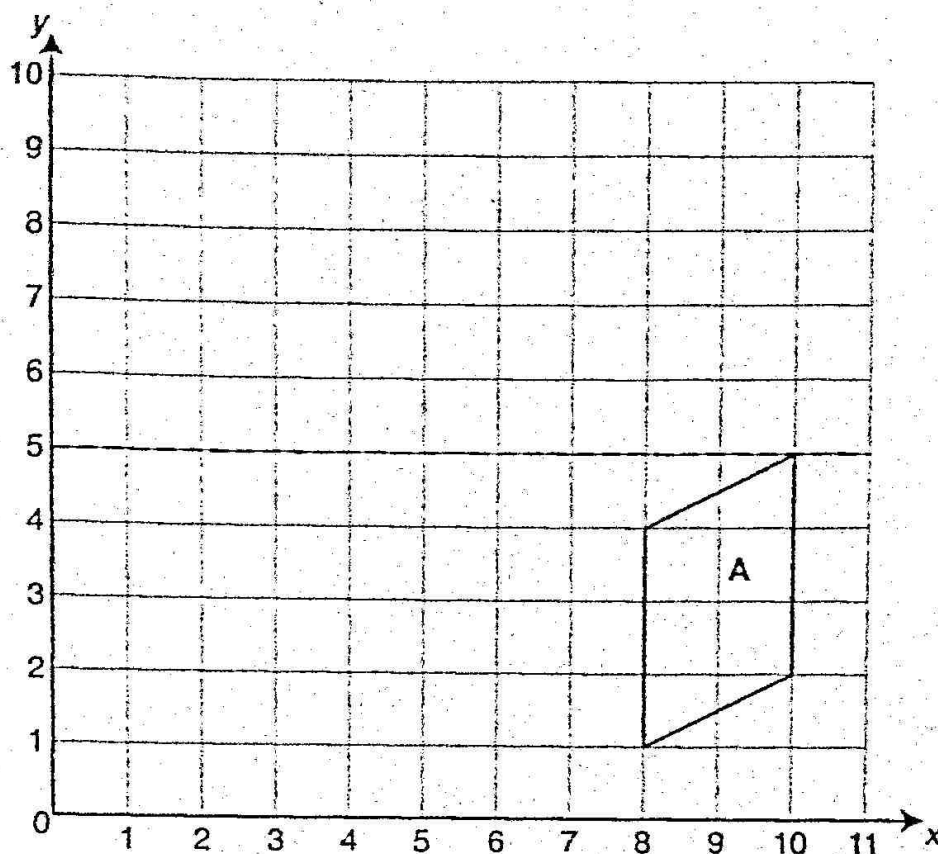
- (v) Which Year 6 class has the greatest proportion of children who like the uniform?

Answer: ..... (1)





7. Shape A has been drawn on the centimetre-squared grid below.



(i) What type of quadrilateral is shape A?

Answer: ..... (1)

(ii) What is the area of shape A?

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

(iii) How many lines of symmetry has shape A?

Answer: ..... (1)

(iv) Write down the coordinates of a point which lies completely inside shape A.

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

(v) On the diagram above, reflect shape A in the dashed line.

Label the new shape B.

(2)

(vi) Translate shape A 3 squares left and 1 square up.

Label the new shape C.

(2)



8. These are the shoe sizes of the 5 members of the Brown family:

4       $1\frac{1}{2}$       6      10       $3\frac{1}{2}$

(i) Calculate the range of the shoe sizes.

Answer: ..... (2)

(ii) Calculate the median shoe size.

Answer: ..... (2)

(iii) What is the mean shoe size?

Answer: ..... (3)

9. Bob thinks of a number, doubles it and then subtracts 3

The result is 13

What was Bob's original number?

Answer: ..... (3)



10. (a) Put these masses in size order, starting with the smallest.

400 g      0.204 kg      0.2 kg      42 g      0.24 kg

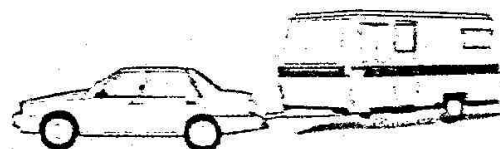
Answer: ..... (3)

- (b) Baby Becky weighed 3.4 kg when she was born.  
She now weighs 850 g more.  
How much does Becky weigh now?



Answer: ..... kg (3)

- (c) Mr Walker's caravan is 6.4 metres long.  
It is 1.83 metres longer than his car.  
How long is his car?



Answer: ..... m (2)

11. (i) Draw accurately triangle  $PQR$ , in which  
 $PQ = 9 \text{ cm}$   
 angle  $QPR = 100^\circ$  and  
 angle  $PQR = 35^\circ$

(The point  $P$  is already drawn for you.)



- (ii) Measure and write down the length of  $PR$ .

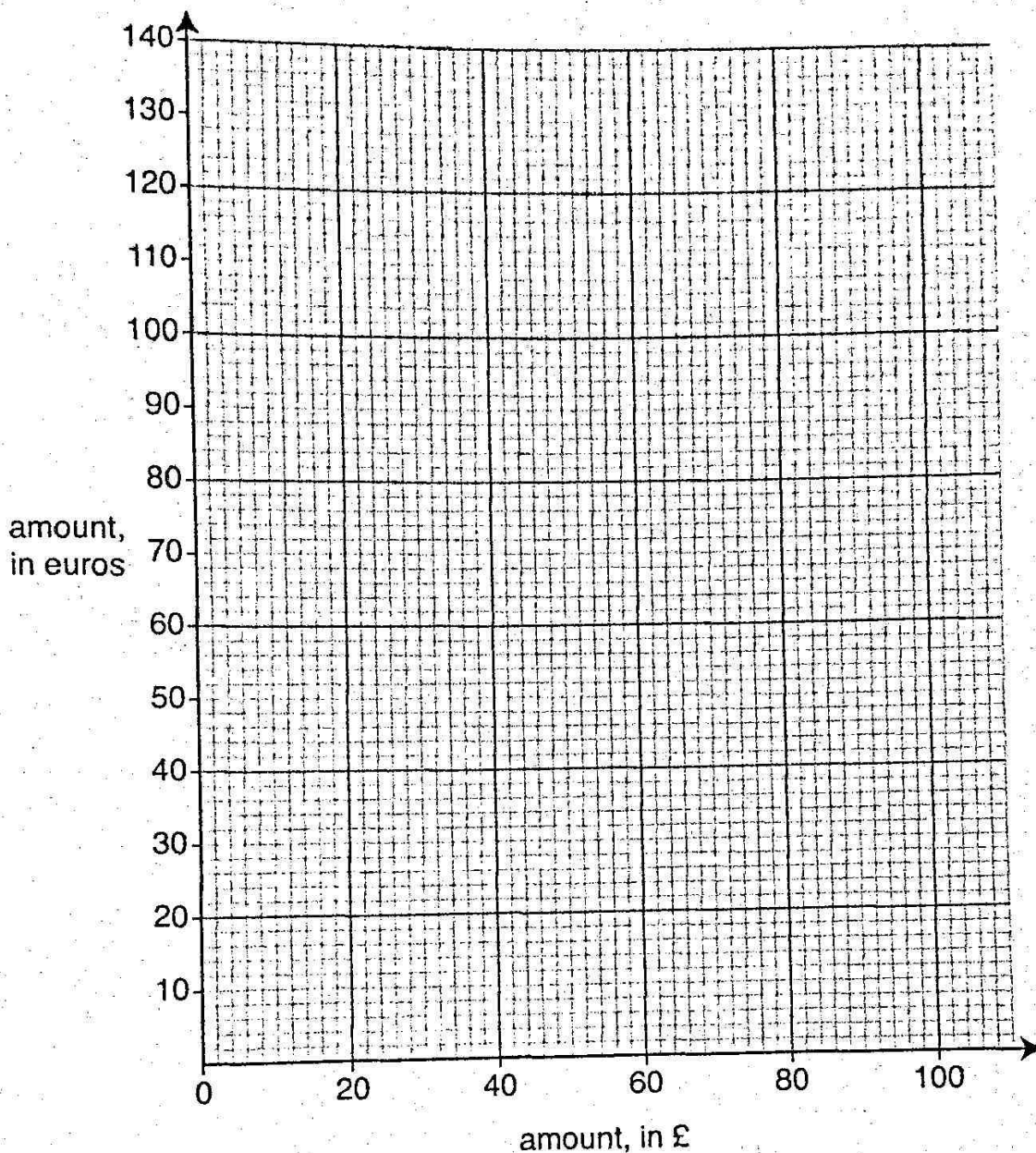
Answer: ..... cm (1)

- (iii) What is the total of all three angles in the triangle?

Answer: ..... (1)

12. When Clare went on holiday, she discovered that £100 was equivalent to 140 euros.

(i) Use this fact to draw a conversion graph on the grid below.



(ii) Use your graph to find the answers to the questions below, showing clearly how you take your readings.

(a) How many euros are equivalent to £80?

Answer: ..... euros (2)

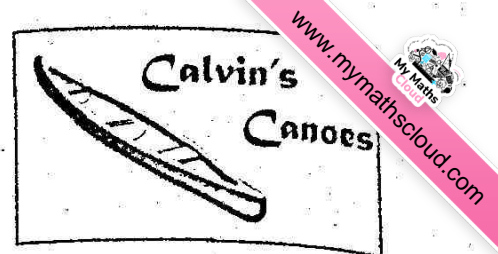
(b) How many pounds are equivalent to 56 euros?

Answer: £ ..... (2)

Turn over



13. Calvin has 15 canoes for hire from his shop. During April, he kept a tally of the number of canoes which were hired each day.

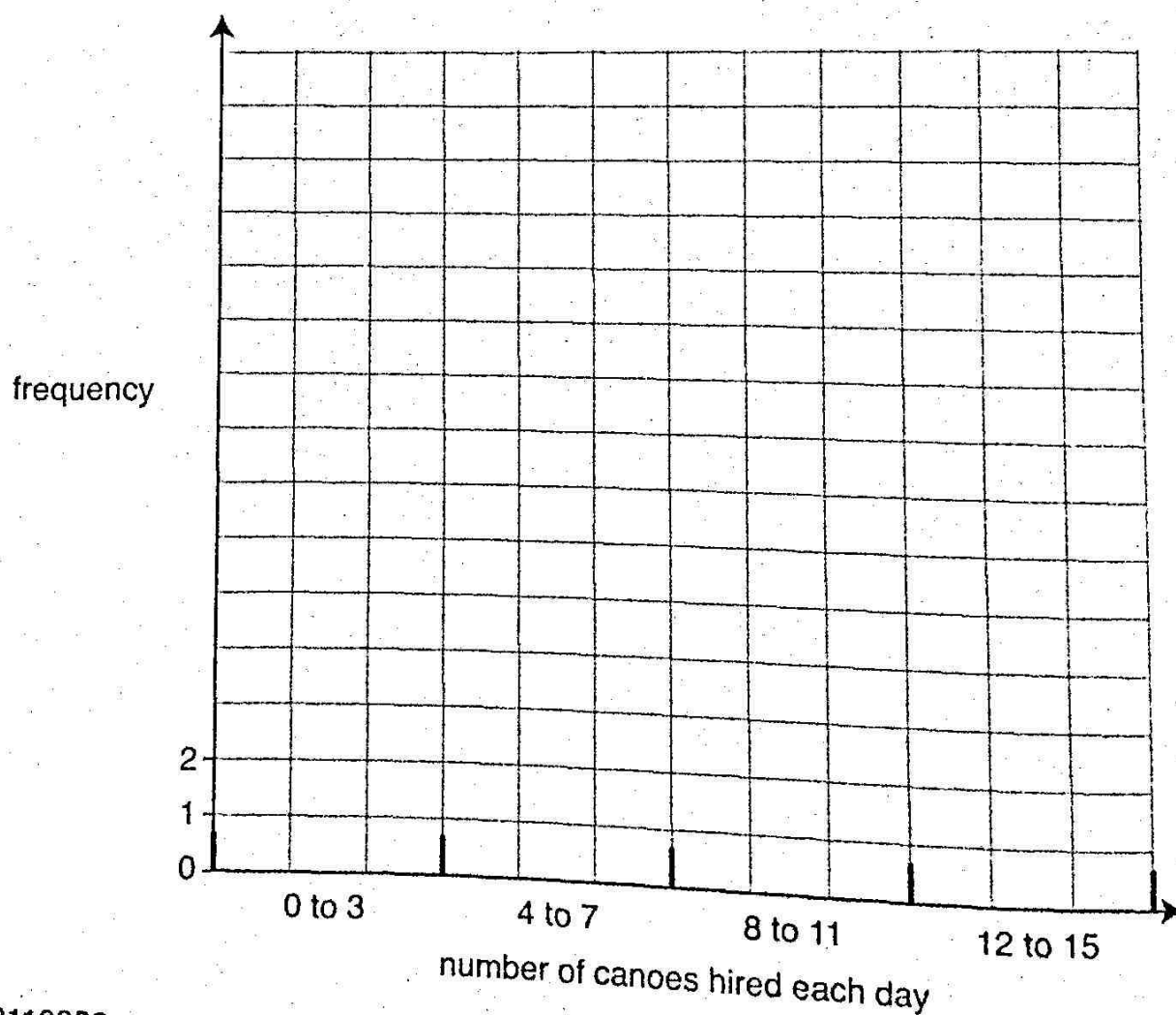


Here are his results for the first 29 days:

number of canoes hired each day	tally	frequency
0 to 3	II	2
4 to 7	III	
8 to 11	III III	
12 to 15	III	
total		30

On the last day of the month, 10 canoes were hired.

- Add this result to the tally column. (1)
- Complete the frequency column in the table. (2)
- Use the information in the table to draw a bar chart on the grid below. (3)



(iv) What is the modal class?

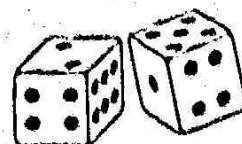
Answer: ..... (1)

Altogether, 281 people hired canoes during April.

(v) Given that each person paid £16 to hire a canoe, calculate the total amount of money which Calvin received.

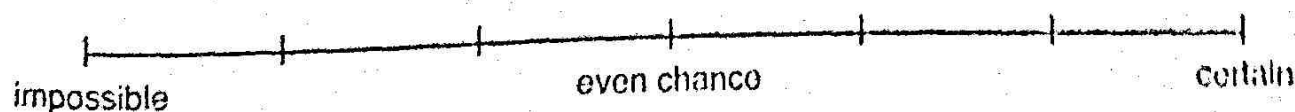
Answer: £ ..... (3)

14. Nicola has some fair dice.  
She chooses one and rolls it.

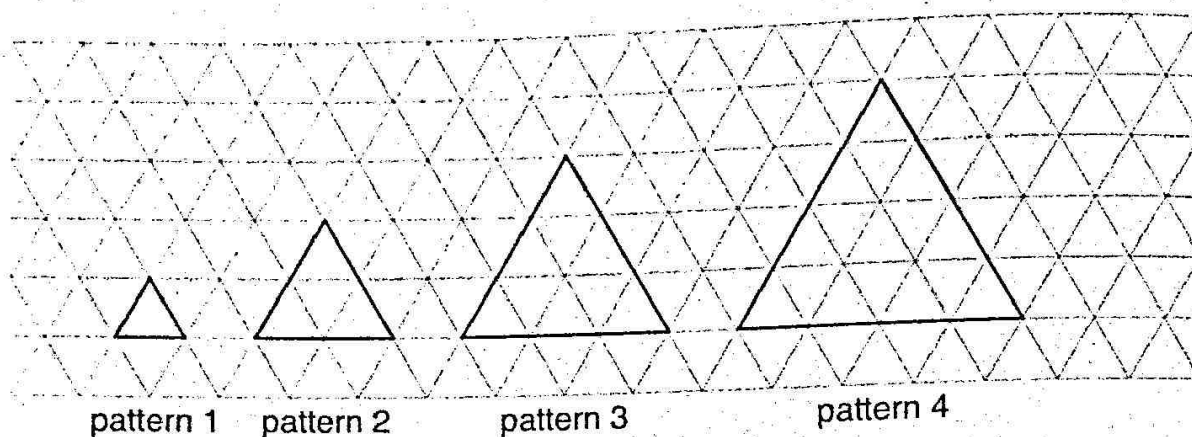
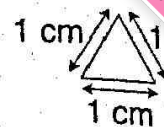


On the probability scale below, mark the following probabilities with the letter shown:

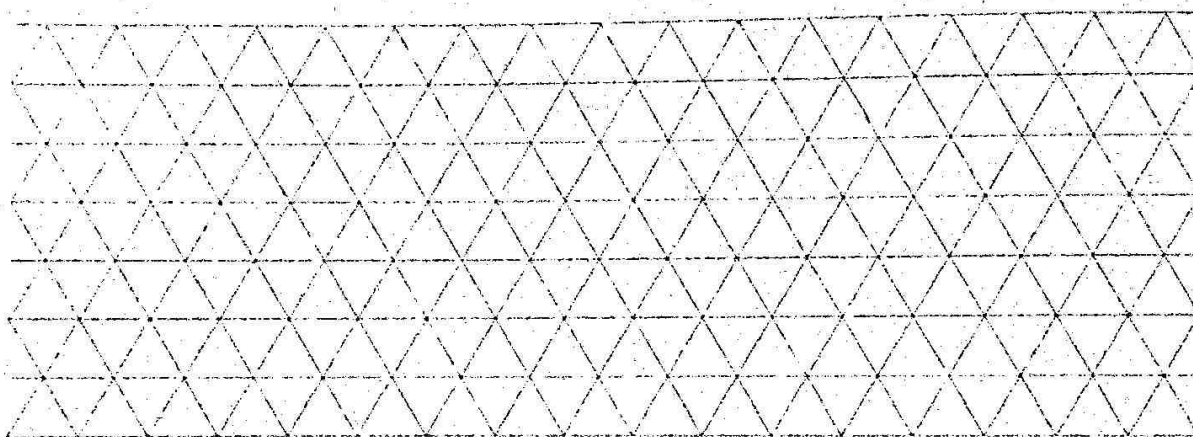
- A the number on the top face is even (1)
- B the number on the top face is less than 2 (1)
- C the number on the top face is a factor of 60 (1)



15. Here is a sequence of patterns drawn on triangular paper. Each small triangle is equilateral with each side 1 cm long.



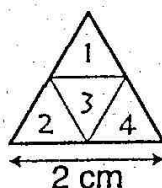
- (i) Draw pattern 5 below.



(1)

Peter has been asked to count the number of small triangles in each shape. He must also work out the perimeter of each shape.

For pattern 2,



- there are four small triangles inside the shape
- the perimeter is 6 cm



(ii) Complete the table below.

pattern number	number of small triangles	perimeter, in cm
pattern 1	1	3
pattern 2	4	6
pattern 3		
pattern 4		
pattern 5		

(3)

(iii) How many small triangles are there in pattern 10?

Answer: ..... (2)

(iv) What is the perimeter of pattern 10?

Answer: ..... cm (2)

(v) One pattern has a perimeter of 66 cm.  
What is the number of the pattern?

Answer: ..... (1)

TURN OVER FOR QUESTION 16

16. 'Plusses and Minuses' is a game for 2 people.

You score three points for a win, one point if you draw, and you lose two points if you lose the game.

All of the students in Mr Brown's class play five games.

Amri wins three games, draws one and loses one, so her total score is 8 points.



### SCORING

3 points if you win  
1 point if you draw  
-2 points if you lose

Everyone plays  
5 games.

(i) Complete the table below.

student	number of wins	number of draws	number of games lost	total score
Amri	3	1	1	8
Brian	4	1	0	
Cathy	2	1	2	
David	0	1	4	
Emma	2	2		
Fred	3			5
Gemma			1	2

(6)

Holly's total score is 4 points and Ian's total score is 0

(ii) Use this information to complete the table below.

student	number of wins	number of draws	number of games lost	total score
Holly				4
Ian				0

(2)

(Total marks: 100)