

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

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



Independent Schools  
Examinations Board

## COMMON ENTRANCE EXAMINATION AT 11+

# MATHEMATICS

Practice Paper 2007 – 2008

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.

1. Here is part of a number pattern:

1, 3, 6, 10, 15, 21, ...

(i) Write down from the list above:

(a) a multiple of 5

Answer: ..... (1)

(b) the sum of 3 and 7

Answer: ..... (1)

(c) a prime number

Answer: ..... (1)

(d) a square number

Answer: ..... (1)

(e) the square root of 36

Answer: ..... (1)

(ii) Write down the next number in the pattern.

Answer: ..... (1)



2. Fay likes walking. Last year she walked to the top of Snowdon which is 1085 metres high. This year she is going to climb Ben Nevis which is 1343 metres high.

(i) How much higher is Ben Nevis than Snowdon?



Answer: ..... m (2)

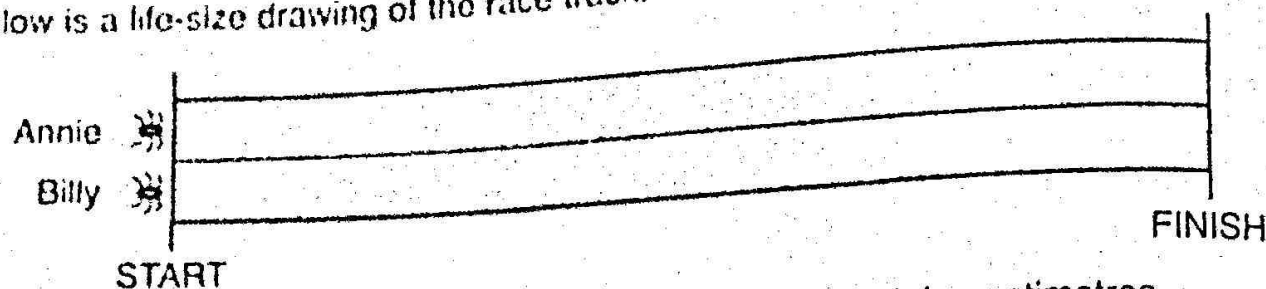
○ (ii) (a) Find the total height of the two mountains.

Answer: ..... m (2)

○ (b) What is the mean height of the two mountains?

Answer: ..... m (2)

3. Two ants, Annie and Billy, are having a race.  
Below is a life-size drawing of the race track.



- (i) (a) Measure and write down the length of the race track in centimetres.

Answer: ..... cm (1)

- (b) Write this distance in millimetres.

Answer: ..... mm (1)

- (ii) Billy wins the race.

When he crosses the finish line, Annie is 2.7 cm behind him.

How far had Annie travelled when Billy finished?

Answer: ..... cm (2)

4. 38 is exactly halfway between 35 and 41

Write the number which is exactly halfway between

- (i) 6 and 10

Answer: ..... (1)

- (ii) 36 and 50

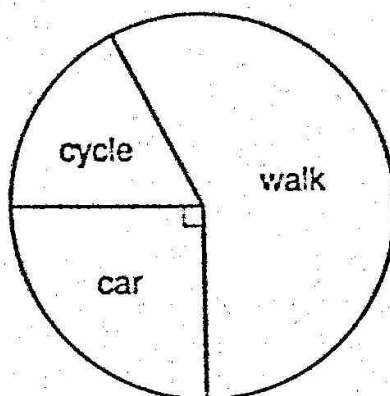
Answer: ..... (2)

- (iii) 1.2 and 2.6



5. There are 32 children in Kate's class.

This pie chart shows how they usually travel to school.



(i) How many children usually come to school by car?

Answer: ..... children (2)

(ii) Approximately what percentage of her class usually cycle to school?

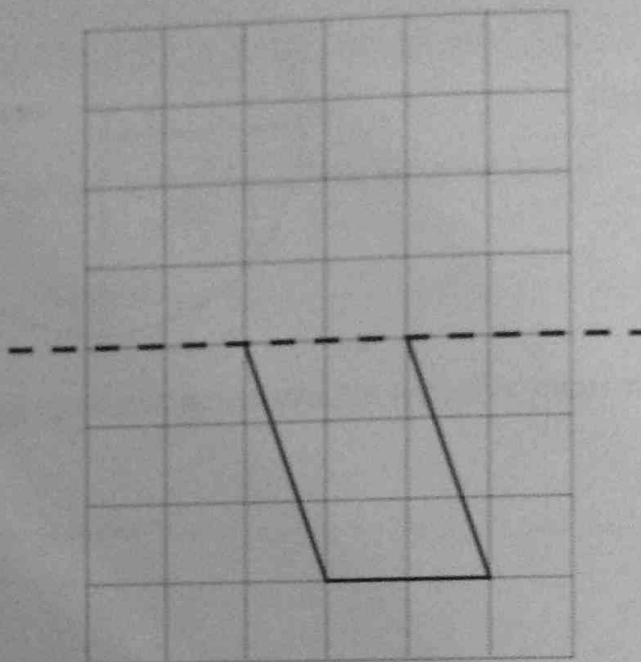
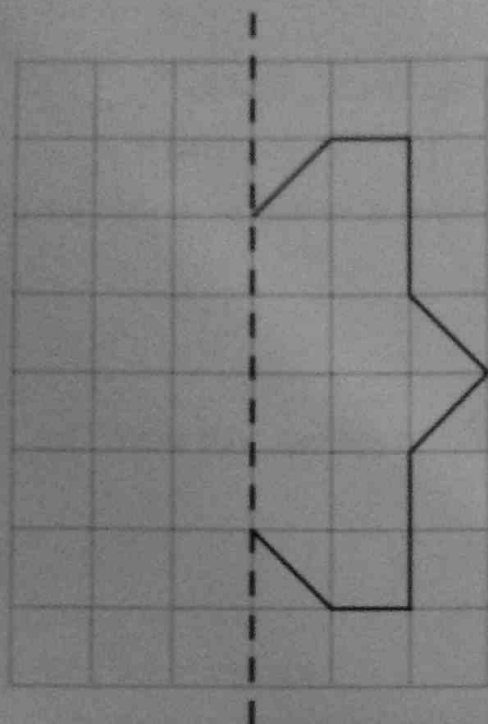
Answer: ..... % (1)

(iii) It takes James 15 minutes to walk to school.  
He can cycle twice as fast as he can walk.  
How long would it take him to cycle to school?

Answer: ..... min (2)

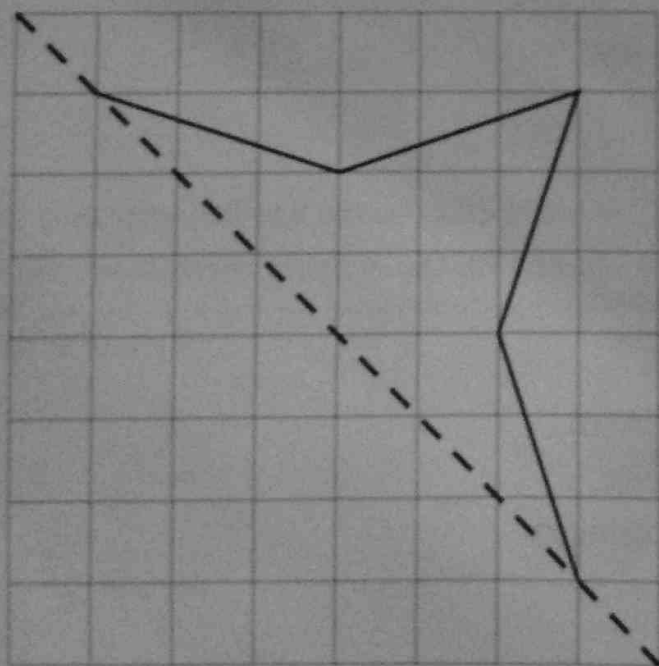
Turn over

6. In the drawings below, mirror lines are dashed.  
 Draw the reflection of each shape in the mirror line.  
 Write the order of rotational symmetry of each picture on the line under each grid.



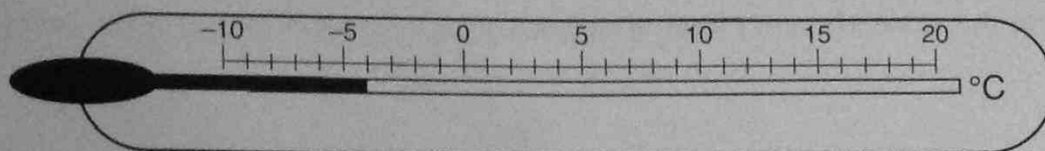
Answer: Order .....

Answer: Order .....



Answer: Order .....

7. Sam has a thermometer in his garden to measure the outside temperature. This is what it showed one morning at 7 am.



- (i) Write down the outside temperature shown on the thermometer.

Answer: ..... °C (1)

- (ii) At 7 am, the temperature inside his house was 17 °C.  
How many degrees warmer was it inside than outside?

Answer: ..... °C (2)

- (iii) When he arrived home from school at 4 pm, the outside temperature had risen by 9 °C.  
What was the outside temperature at 4 pm?

Answer: ..... °C (2)

8. Put these measurements in order of size, starting with the smallest.

85 cm      5.8 m      0.58 m      0.05 m      850 cm

Answer: ..... (3)

Turn over



9. 50 children belong to an art club which meets each week. They can choose to do drawing or pottery.

(i) Complete the table showing their choices.

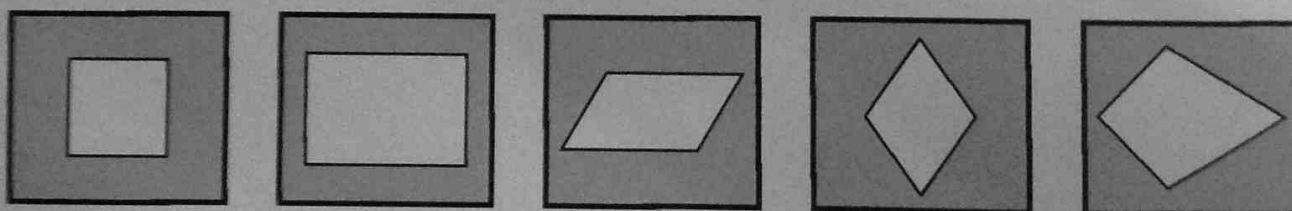
	drawing	pottery	total
boys	9		24
girls	14	12	
total			50

(4)

- (ii) One week, 25% of the boys were absent. How many boys were not absent?

Answer: ..... (3)

10. Emily has five cards with these shapes drawn on them.



She puts them into a bag and picks out one at random.

On the line below, mark the following probabilities using the letters shown.

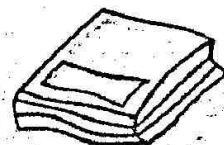
- A She picks out a card which has a shape with four sides.  
 B She picks out a card which has a shape whose angles are all right angles.  
 C She picks out a card with a pentagon on it.



(3)



11. Maths exercise books are sold in packs of 10 books.  
Each book contains 48 pages.



- (i) How many pages are there altogether in a pack?

Answer: ..... pages (1)

Miss Taik needs to buy 34 books for her class.

- (ii) (a) How many packs must she buy?

Answer: ..... packs (1)

- (b) If each pack costs £8.39, how much does she spend altogether?

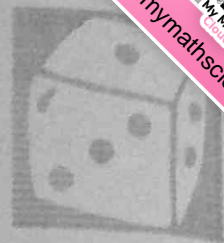
Answer: £ ..... (2)

The pages are covered in squares which are 7 millimetres wide.

- (iii) How many 7 mm squares fit across a page which is 196 mm wide?

Answer: ..... (2)

Turn over



12. Roy has some dice. He picks one and rolls it 30 times.  
He records the number showing. Here are his results.

number on upper face	tally	frequency
1		
2		1
3		4
4		4
5		
6		

total 30

- (i) Complete the frequency table.

(2)

- (ii) Which score is the mode?

Answer: ..... (1)

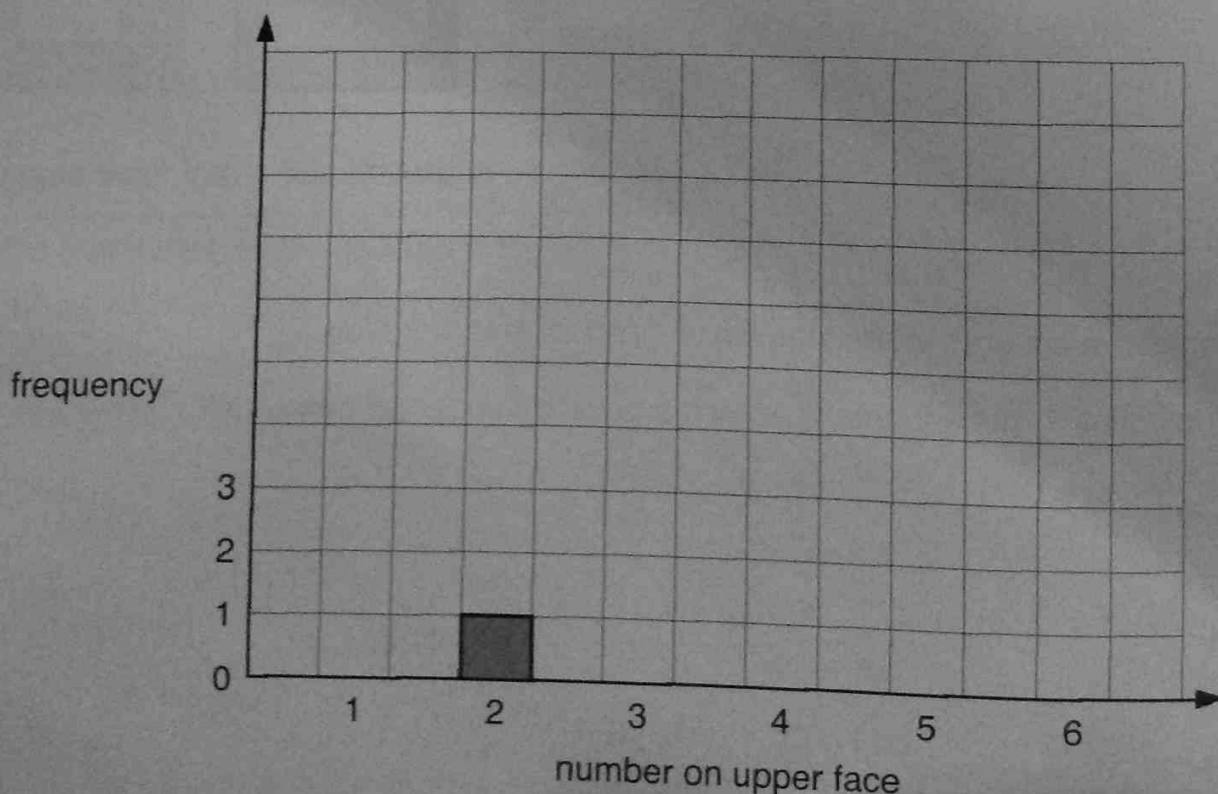
Roy thinks that the die is biased.

- (iii) Do you agree?

..... because .....

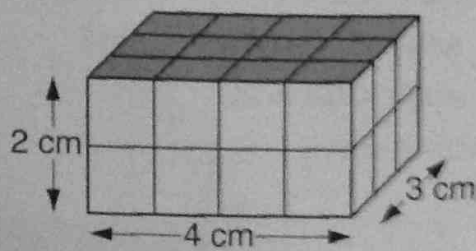
..... (1)

- (iv) Complete the bar chart below to show his results.



(3)

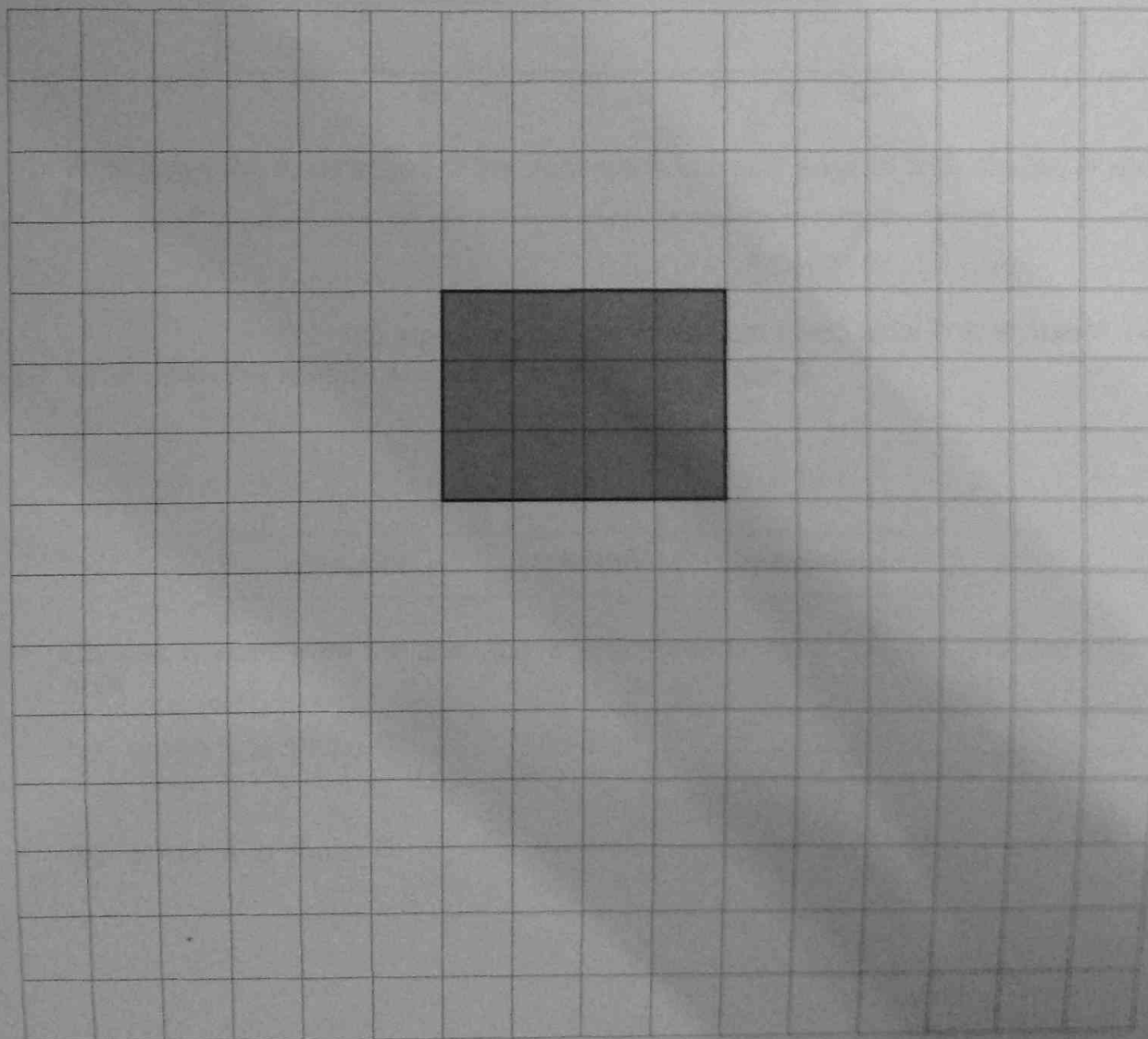
13. Here is a cuboid made from 1-cm cubes.



(i) Find the volume of the cuboid.

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

(ii) Draw a net for this cuboid on the centimetre square grid below.  
The shaded face has already been drawn for you.



(4)



14. (i) Draw accurately triangle  $ABC$  in which  
 $AB = 9 \text{ cm}$   
 angle  $BAC = 50^\circ$  and  
 angle  $CBA = 28^\circ$ .

The point  $A$  is already drawn for you.

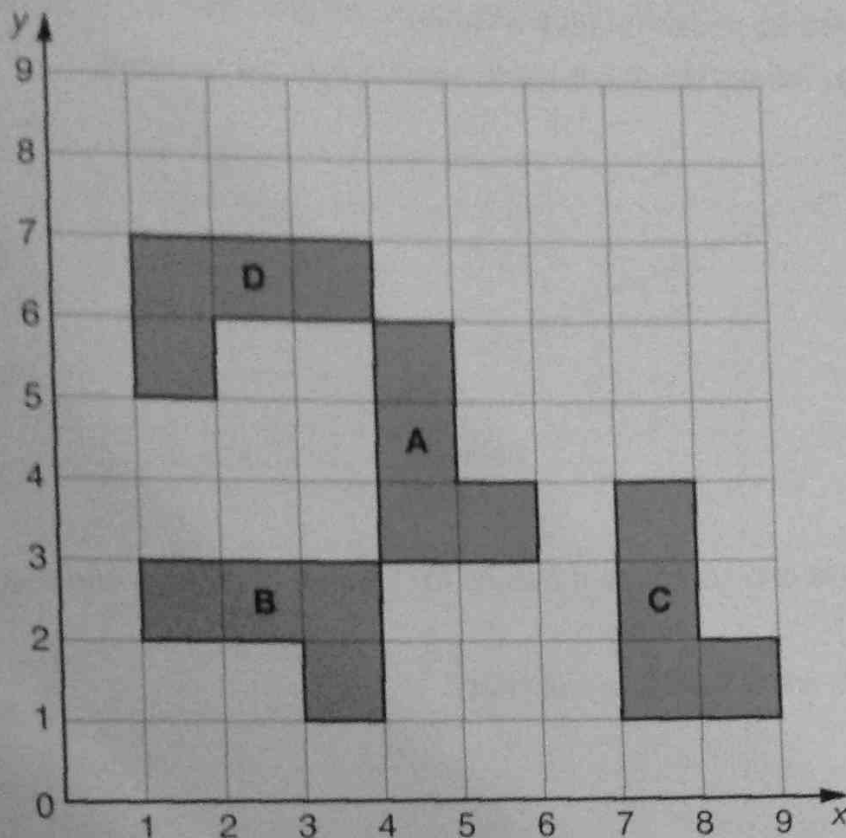


(3)

- (ii) Measure and write down the size of the obtuse angle  $C$ .

Answer: .....<sup>o</sup> (1)

15. In the diagram below, shape A has been transformed to give shapes B, C and D.



- (i) Write down the co-ordinates of the point which is on the edge of both shapes A and D.

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

- (ii) Write down the shapes which are congruent to shape A.

Answer: ..... (1)

(iii)

reflection	rotation	translation
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Choose a word from the box above which describes a possible transformation from

- (a) shape A to shape C

Answer: ..... (1)

- (b) shape A to shape D.

Answer: ..... (1)



16. Emma has bought a new 'phone for £75

(i) Emma receives £5 pocket money a week.

For how many weeks did she have to save to buy her 'phone?



Answer: ..... weeks (2)

(ii) The call charges are 15 pence a minute for the first 3 minutes and then 6 pence a minute after that.

(a) How much will a 2-minute call cost?

Answer: ..... pence (1)

(b) How much will a 10-minute call cost?

Answer: ..... pence (3)

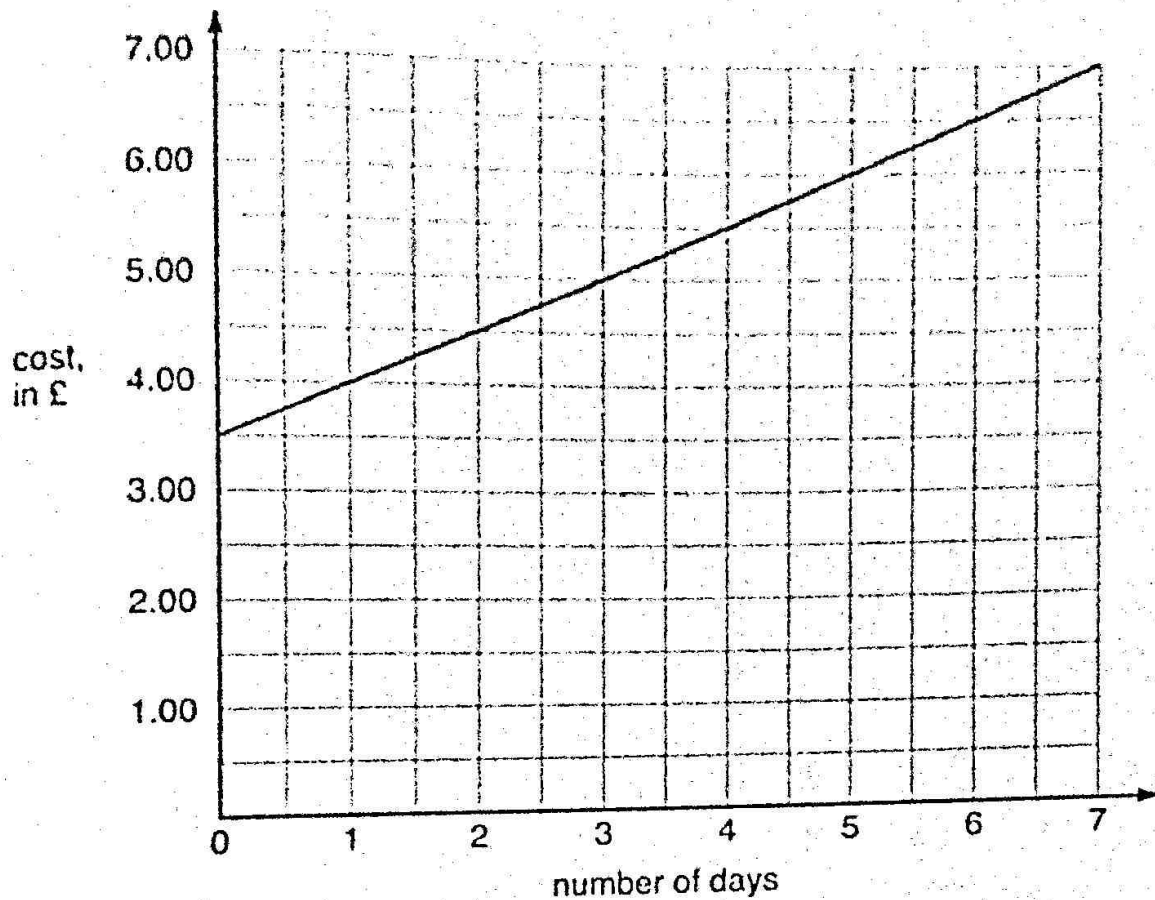
(c) It cost £1.11 to call her friend Anna. For how long did the call last?

Answer: ..... minutes (3)





17. Here is a graph showing the cost of hiring a DVD from David's DVD store. The charge depends on how long you keep the DVD.



(i) Bob pays £5.00 to hire his DVD. For how many days can he keep it?

Answer: ..... days (1)

(ii) How much does it cost to hire a DVD for 6 days?

Answer: £ ..... (1)

(iii) You can also buy DVDs at the store. They cost £16 each. How much would it cost to buy 13 DVDs?

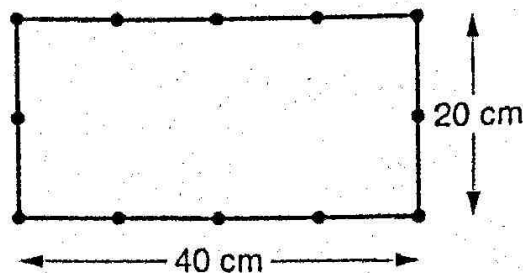
Answer: £ ..... (3)

Turn over

18. Bob is making rectangular fields for his younger brother's toy farm.  
Each piece of fencing is 10 cm long. These are joined together by fence posts.

(i) His first field is 20 cm wide and 40 cm long.

Here is a plan view.



(a) What is the perimeter of his field?

Answer: ..... cm (2)

(b) How many fence posts does he need?

Answer: ..... posts (1)

(ii) His brother now asks him to make a field which is 30 cm by 50 cm.

(a) What is the perimeter of this field?

Answer: ..... cm (2)

(b) How many fence posts will he need?

Answer: ..... posts (1)

(iii) Work out how many fence posts he will need to make a field which is 60 cm by 30 cm.

Answer: ..... posts (2)

(Total marks: 100)