

Answer **all** questions in the spaces provided.

- 1** The ratio of boys to girls in a class is 2 : 3  
Which of the following statements is True (T), False (F) or could be true (C).  
Put a tick in the appropriate box.  
The first one is done for you.

Statement	T	F	C
There are 13 boys in the class		✓	
There are 30 students in the class			
The fraction of boys in the class is $\frac{2}{3}$			
The percentage of girls in the class is 60%			
The number of girls in the class must be a multiple of 3			

(3 marks)

- 2** The sum of the two digits of the number 18 is 9 because  $1 + 8 = 9$   
How many whole numbers from 10 to 99 inclusive have the sum of their digits equal to 9?

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Answer ..... (3 marks)

- 3** Mr Jones buys a new car for £ 18 245 in June 2004.  
He sold it for £ 8500 in June 2009.

He uses a formula to work out the annual depreciation.

$$\text{Annual depreciation} = \frac{\text{Original price (£)} - \text{Final price (£)}}{\text{Number of years}}$$

- 3 (a)** Use the formula to work out the annual depreciation of the car.  
Give your answer to the nearest £10.

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Answer £ ..... (3 marks)

- 3 (b)** Estimate the value of the car in June 2010.

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Answer £ ..... (2 marks)

- 4** Use your calculator to evaluate  $\frac{6.1 \times 5.9}{8.7 - 3.4}$

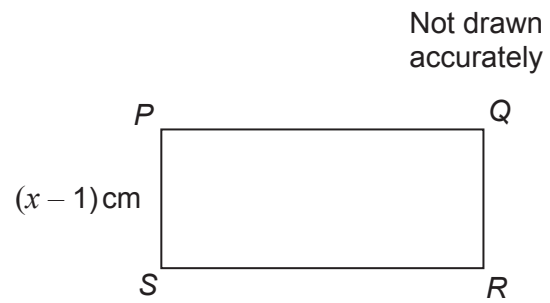
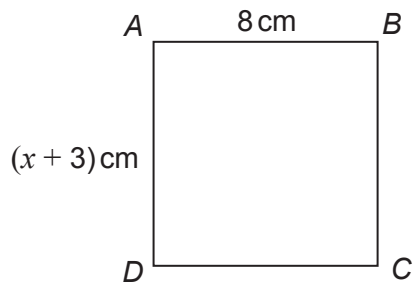
- 4 (a)** Write down your full calculator display.

Answer ..... (1 mark)

- 4 (b)** Write down your answer to a suitable degree of accuracy.

Answer ..... (1 mark)

\* 5

 $ABCD$  is a square. $PQRS$  is an oblong.

The oblong and the square have the same perimeter.

Work out the length of  $PQ$ .

Show clearly how you work out your answer.

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Answer ..... cm (4 marks)

**Turn over for the next question**

- 6** Ronan is designing a game.  
He has two sets of discs laid face down on a table.  
The first set of five discs are labelled 1, 3, 5, 7, 9  
The second set of four discs are labelled 2, 4, 6, 8
- Players turn over one disc, at random, from each set and add the numbers together.
- Ronan uses the game to raise money for charity.  
Each player pays 20p to play the game.  
If a player gets a total of exactly 13 they win a bar of chocolate.  
It costs Ronan 50p for each bar of chocolate.
- If 100 people play the game, show that Ronan should expect to raise £ 12.50 for charity.  
You may find the grid below useful.

	1	3	5	7	9
2	3				
4					
6					
8					

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(4 marks)

- 7** In a science experiment Sita adds weights to a spring.  
Each time she adds a weight she measures the length of the spring.  
Her results are shown in the table.

Weight (g)	Length of Spring (cm)
20	165
30	180
40	195
50	210

- 7 (a)** What is the length of the spring for a weight of 45 g?

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Answer ..... cm (2 marks)

- 7 (b)** Work out the length of the spring with no weight on it.

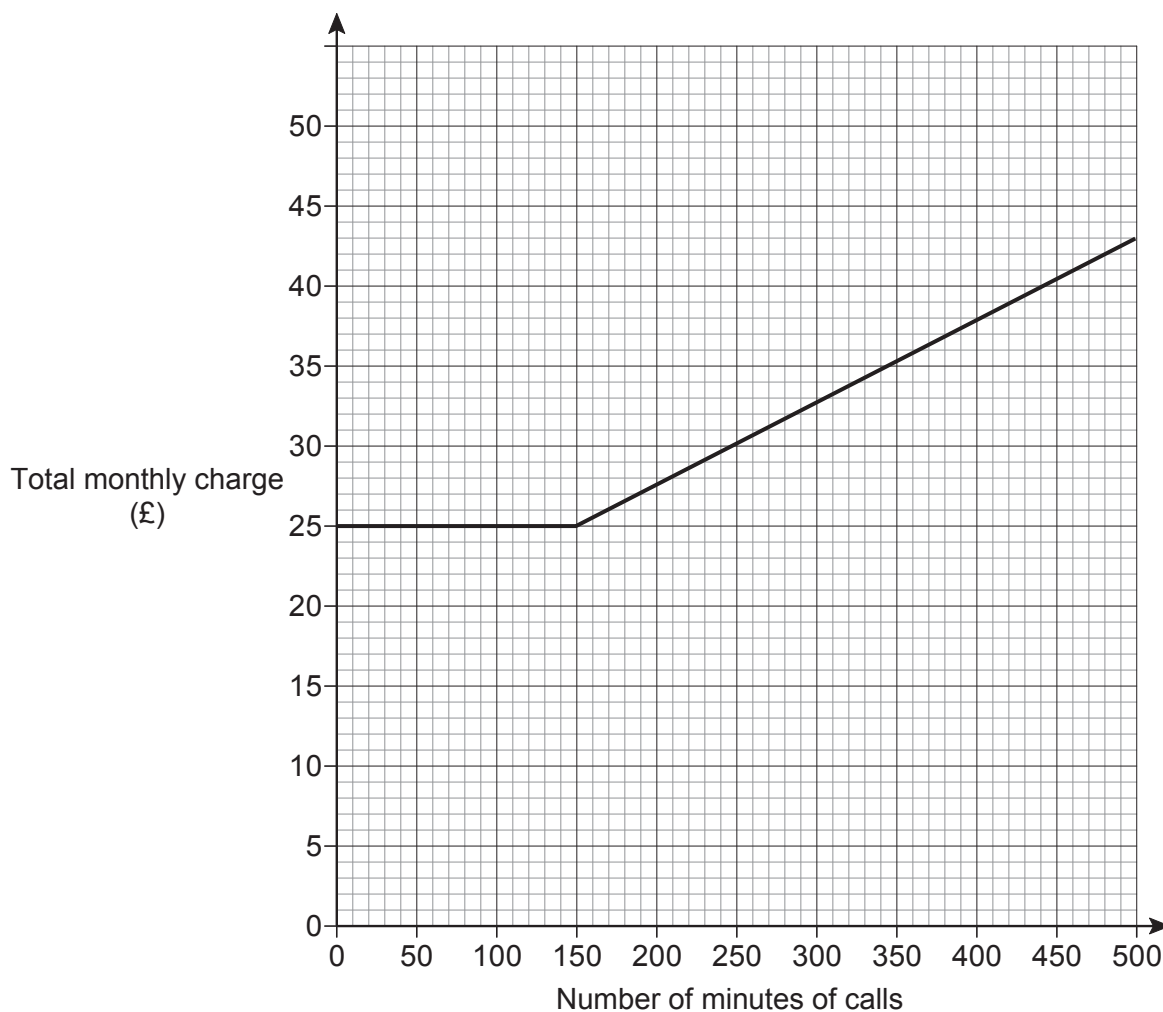
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Answer ..... cm (2 marks)

**Turn over for the next question**

- 8** Viki has a mobile phone contract.  
She never sends texts.

The graph shows how the total monthly charge is calculated for her mobile phone contract for up to 500 minutes of calls.



- 8 (a) (i)** Write down the basic monthly charge.

Answer £ ..... (1 mark)

- 8 (a) (ii)** Write down the number of minutes of free calls

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Answer ..... minutes (1 mark)

8 (b) Work out the charge per minute for the other calls.

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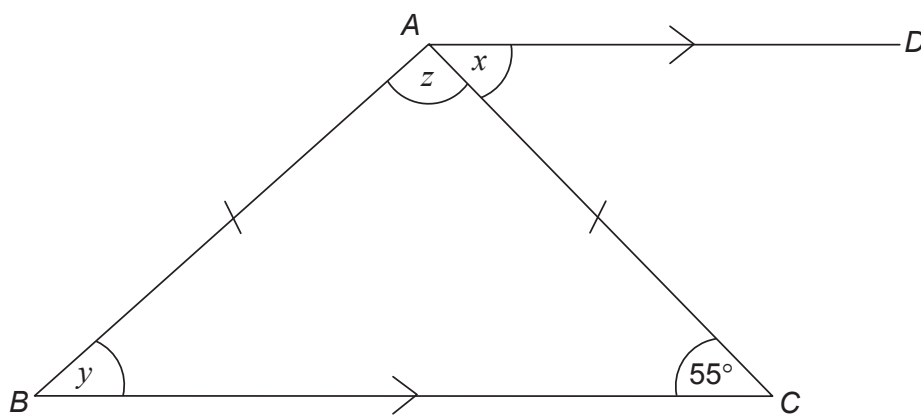
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Answer ..... pence (3 marks)

9 *ABC* is an isosceles triangle with  $AB = AC$ .  
*BC* is parallel to *AD* and angle  $BCA = 55^\circ$



Not drawn  
accurately

Work out the sizes of the angles marked  $x$ ,  $y$  and  $z$ .

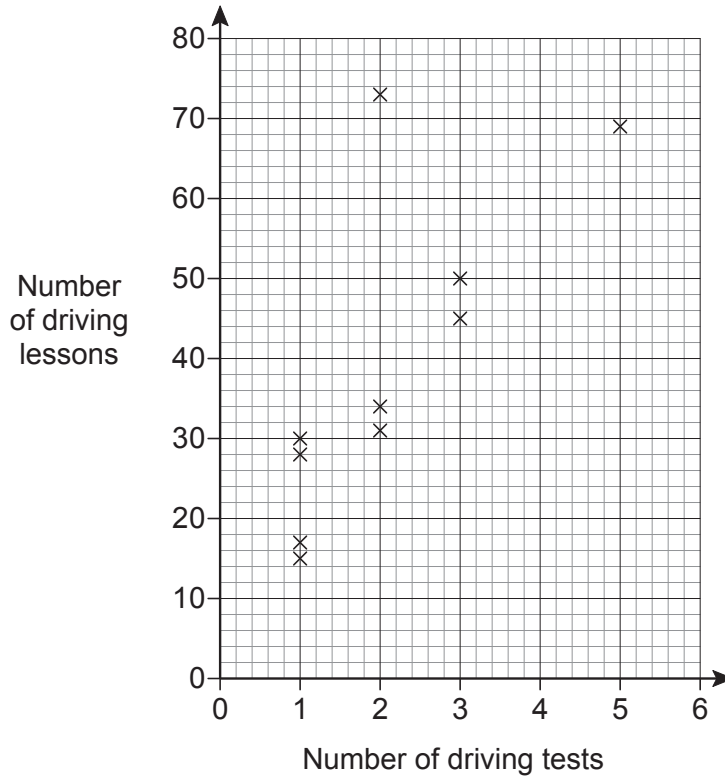
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Answer  $x =$  ..... degrees  
 $y =$  ..... degrees  
 $z =$  ..... degrees

(4 marks)

- 10** Rio wants to know the number of driving lessons he might need before he passes his driving test.  
 He also wants to know the number of times he might have to take his driving test before he passes.  
 He collects some data and shows it on this scatter graph.



- 10 (a)** Rio ignores one of the points on the scatter graph.

Circle this point and give a reason why it should be ignored.

Reason .....

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*(2 marks)*

- 10 (b)** Draw a line of best fit on the scatter graph.

*(1 mark)*



**10 (c)** Rio has already failed his driving test three times after a total of 40 driving lessons.

**10 (c) (i)** Estimate how many **more** driving lessons Rio needs if he is to pass his driving test on the fourth attempt.

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Answer ..... (2 marks)

**10 (c) (ii)** Give a reason why this estimate might be unreliable.

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(1 mark)

**11** Becky has a collection of 210 DVDs.  
The width of each DVD is 14 millimetres.  
She keeps her DVDs on five shelves.  
Each shelf is 70 centimetres long.

How many more DVDs does she have space for?  
Show clearly how you work out your answer.

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Answer ..... (5 marks)

**Turn over for the next question**