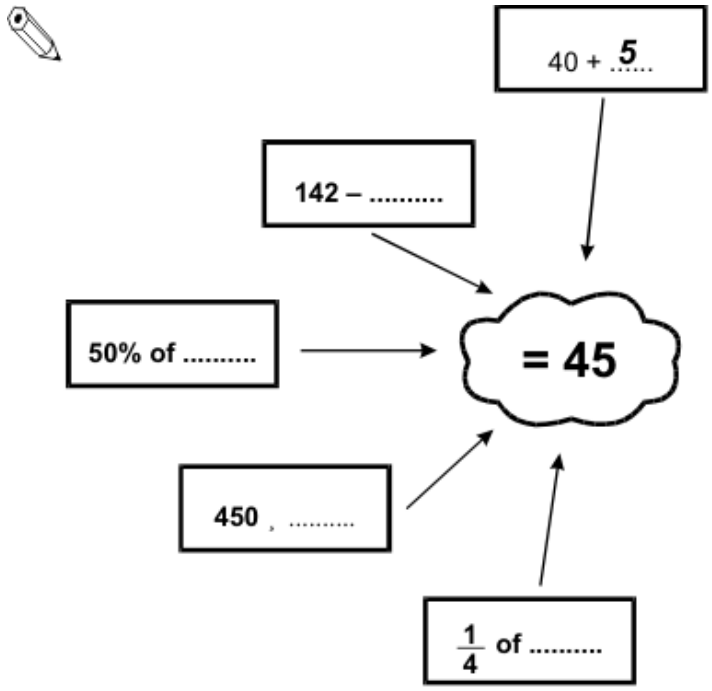
Q1. Forty-five

(a) Fill in the missing numbers so that the answer is **always 45.**

The first one is done for you.



4 marks

(b) Fill in the gaps below to make the answer 45.

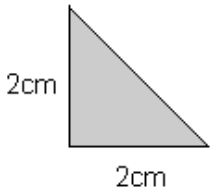
You may use any of these signs: + – × ÷

28 ..... 2 ..... 31 = 45

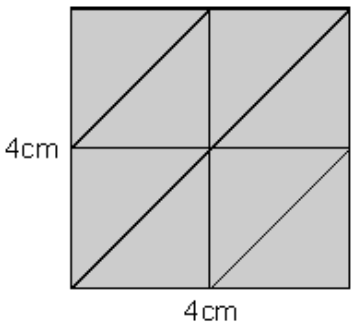
1 mark

Q2. Triangles

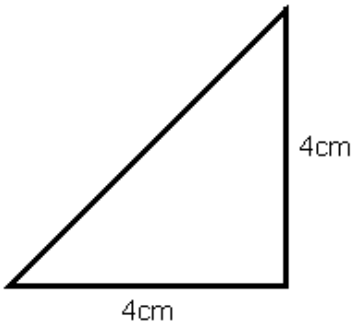
This is a right-angled triangular tile:

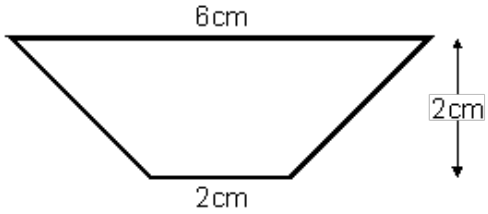


You can fit **8** of the tiles into a 4cm by a 4cm square like this:



Write **how many** of the tiles you can fit into each of these shapes.

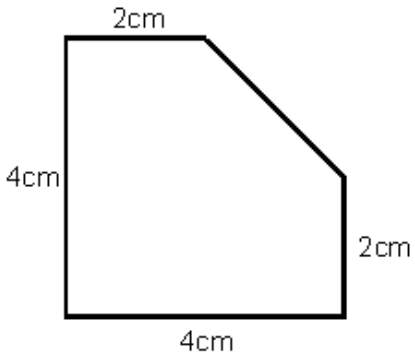


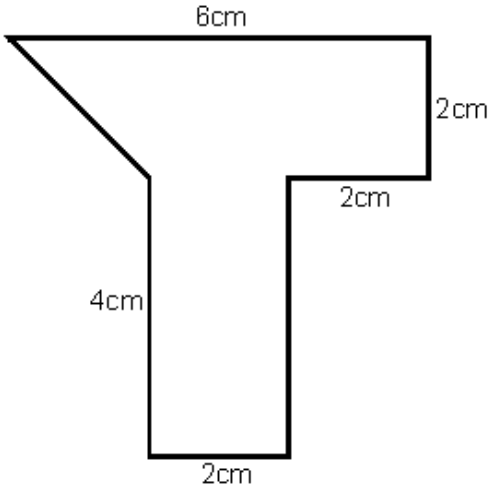


Number of tiles: .....

Number of tiles: .....

2 marks





Number of tiles: .....

Number of tiles: .....

2 marks

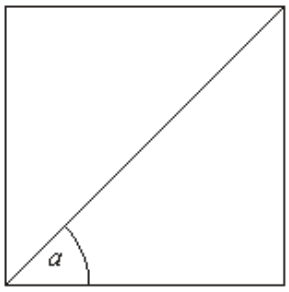
Q3. Angles in a square

(a) How many degrees are there in a right angle?

..... degrees

1 mark

(b) The diagram shows a square.



How many degrees is angle a?

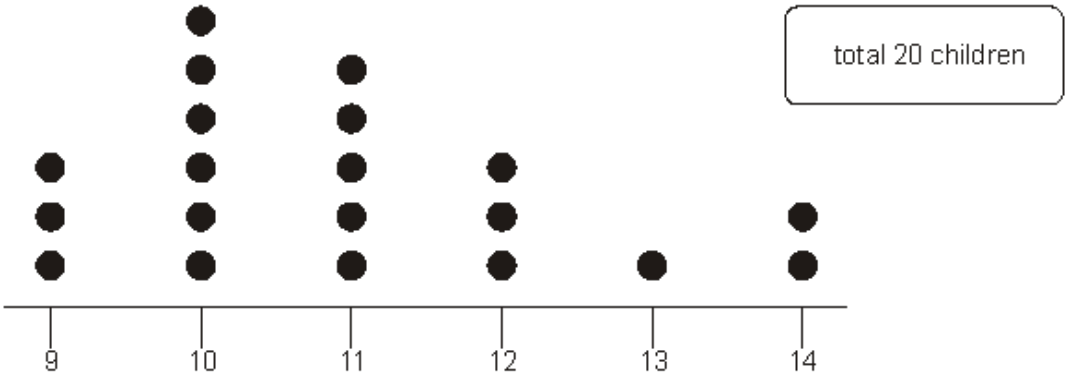
..... degrees

1 mark

Q4. Youth club

20 children went to a youth club.

The dot plot shows their ages in years.



(a) What was the most common age?

..... years

1 mark

(b) How many of the children were aged **12 or older**?

.....

1 mark

(c) **14 children** went to a different youth club.

Here is information about their ages in years.

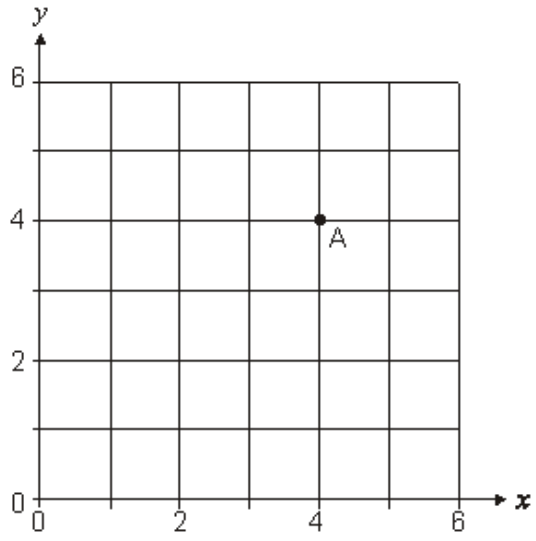
The youngest children were aged 10
3 children were aged 11
More children were aged 12 than were aged 11
The most common age was 13
No children were older than 13

Show this information on the dot plot below.

total 14 children

2 marks

Q5. Point A is marked on the grid. The coordinates of A are (4, 4)



1 mark

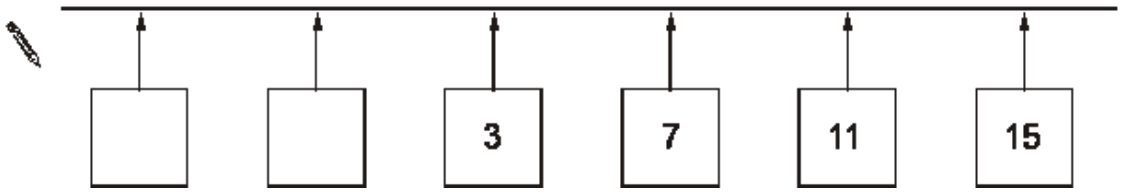
Mark **one point** on the grid that has:

an x coordinate that is **equal to 4**, and a y coordinate that is **greater than 4**

Q6. **Number line**

The number line below goes up in **equal steps**.

Fill in the missing numbers.



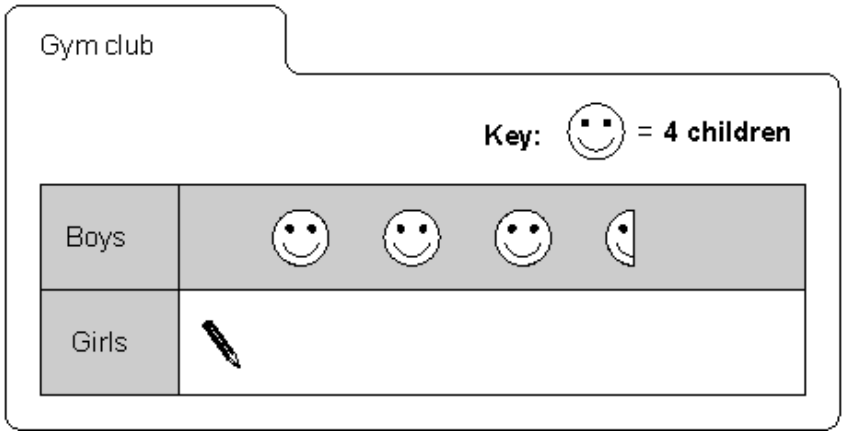
2 marks

Q7. Clubs

A sports centre has two different clubs.

(a) **22 children** go to the gym club.

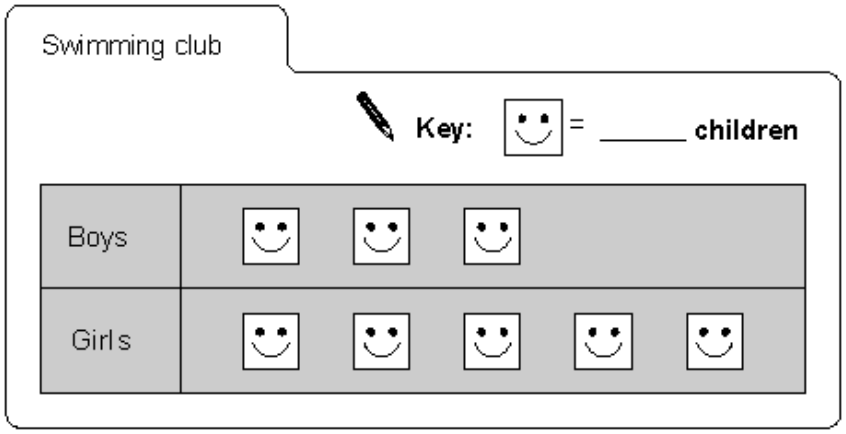
Complete the pictogram.



1 mark

(b) **10 more girls** than boys go to the swimming club.

Complete the key.



1 mark

Q8. Magic square

Look at the three by three table.

Fill in the missing numbers so that

each row adds up to 3,

each column adds up to 3 and

each diagonal adds up to 3

–2	.....	.....
3	1	.....
2	.....	4

2 marks

Q9. Remainder

999 will divide exactly by 37

There is no remainder.

(a) Write down the remainder when **1000** is divided by 37

..... 1 mark

(b) Write down the remainder when **998** is divided by 37

..... 1 mark

(c) Write down a multiple of 37 that is bigger than 1000

.....

1 mark

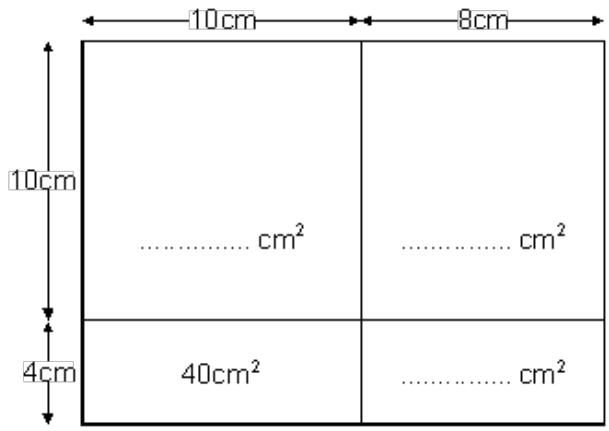
Q10. Areas

(a) The diagram shows a rectangle **18cm** long and **14cm** wide.

It has been split into **four smaller rectangles**.

Write the **area** of each **small rectangle** on the diagram.

One has been done for you.



What is the area of the **whole** rectangle?

..... cm^2

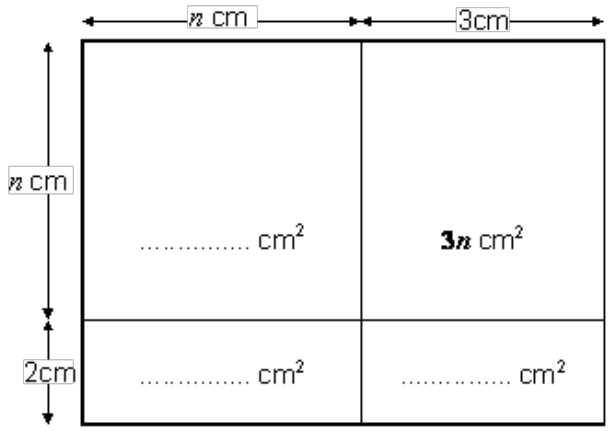
1 mark

(b) The diagram shows a rectangle **(*n* + 3)** cm long and **(*n* + 2)** cm wide.

It has been split into **four smaller rectangles**.

Write a **number** or an **expression** for the **area** of **each small rectangle** on the diagram.

One has been done for you.



1 mark

What is **(*n* + 3) (*n* + 2)** multiplied out?

(*n* + 3) (*n* + 2) = ...

1 mark

Q11. Rectangles

A rectangle has an **area** of **24 cm²**

How long could the sides of the rectangle be?

Give three **different** examples.

..... cm and ..... cm

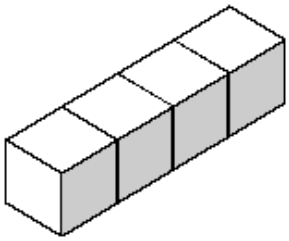
..... cm and ..... cm

..... cm and ..... cm

2 marks

Q12. Cubes

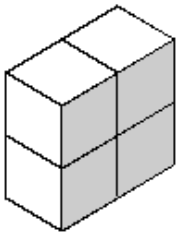
This shape is made from four cubes joined together.



The table shows information about the shape.

Volume	4 cm^3
Surface Area	18 cm^2

The same four cubes are then used to make this new shape.



Complete the table for the new shape.

Volume	..... cm^3
Surface Area	..... cm^2

2 marks

Q13. Solving

(a) When $x = 5$, work out the values of the expressions below.

$2x + 13 =$ .....

$5x - 5 =$ .....

$3 + 6x =$ .....

2 marks

(b) When $2y + 11 = 17$, work out the value of y

Show your working.

$y =$ .....

2 marks

Q14. Set of three

The **mean** of these numbers is **6**

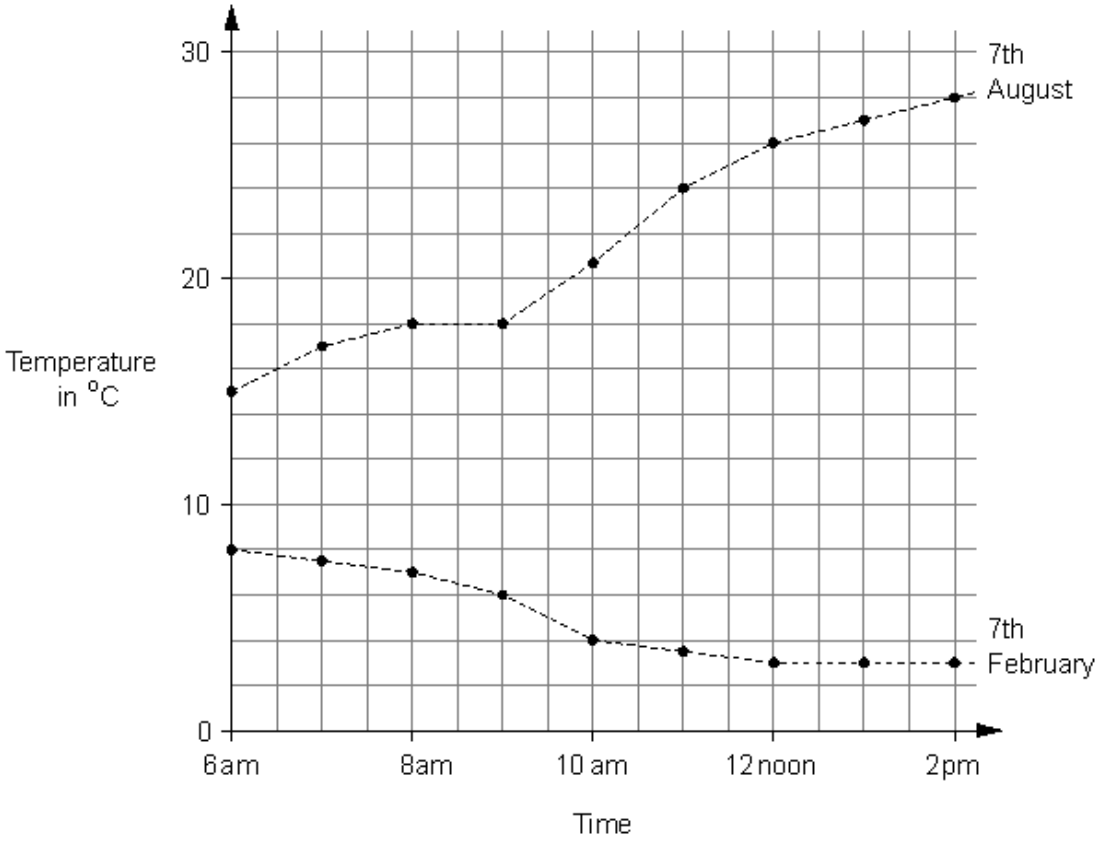
10	1	7

Write three numbers that have a mean of **7**

1 mark

Q15. Temperature

The graph shows the temperature in a town between 6am and 2pm on 7th February and 7th August one year.



(a) Estimate as accurately as you can the time when the temperature reached 20°C on 7th August.

..... am

1 mark

(b) What was the difference between the temperatures at 12 noon on the two days?

..... °C

1 mark

(c) On 7th February between 6am and 2pm the temperature dropped.

How many degrees did the temperature drop?

..... °C

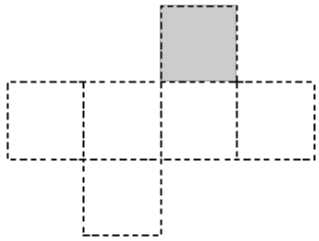
1 mark

Q16. Nets

(a) The diagram shows a net that folds to make a cube.

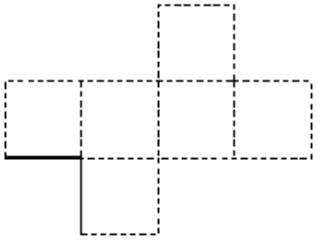
When the net is folded, which face will be **opposite** the shaded face?

Put a tick (✓) inside the correct face.



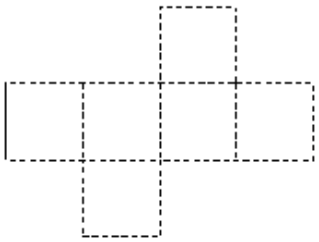
1 mark

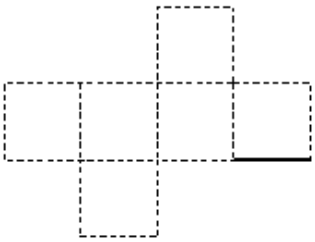
(b) When the net is folded, the two edges shown in bold **join together**.



Which edge will join the one shown in bold on the nets below?

Show your answers by drawing a line on each net.





2 marks

Q17. Solving

Solve these equations.

Show your working.

(a) $4y = 2y + 13$

y = ...

2 marks

(b) $3y + 10 = 2y + 7$

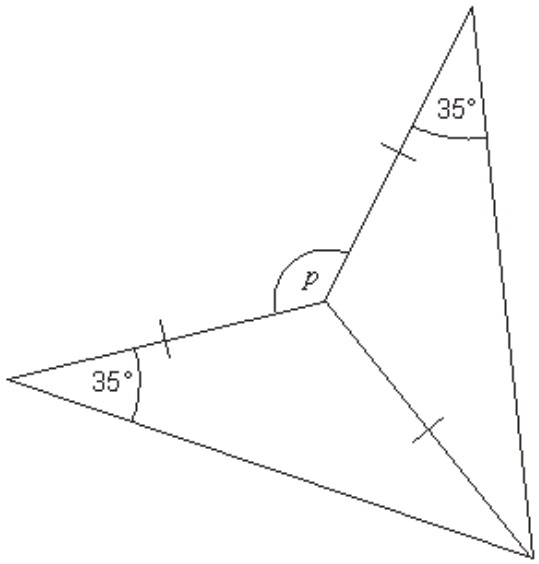
.

y = ...

2 marks

Q18. Angle *p*

This shape has been made from two congruent **isosceles** triangles.



Not drawn accurately

What is the size of angle p?

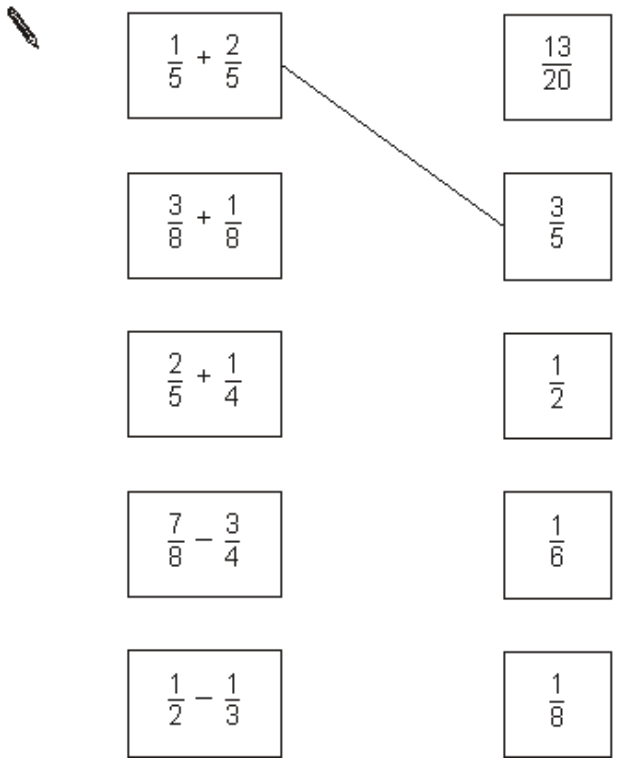
p = ...°

2 marks

Q19. Fractions

(a) Match each calculation with the correct fraction answer.

The first one is done for you.



2 marks

(b) Work out $\frac{1}{2}+\frac{1}{3}$

..... 1 mark

Q20. Test results

There are **25 pupils** in a class.

The table shows information about their test results in maths and English.

		English		
		Level 5	Level 6	Level 7
maths	Level 5	0	1	1
	Level 6	2	7	0
	Level 7	2	1	4
	Level 8	0	1	6

(a) How many pupils had the **same level** in both maths and English?

..... 1 mark

(b) How many pupils had a **higher** level in **maths** than in English?

..... 1 mark

Q21. Counter probabilities

In a bag there are only red, blue and green counters.

(a) I am going to take a counter out of the bag at random.

Complete the table below.

Colour of counters	Number of counters	Probability
Red	6	
Blue		$\frac{1}{5}$
Green	6	

2 marks

(b) Before I take a counter out of the bag, I put **one extra blue** counter into the bag.

What effect does this have on the probability that I will take a **red** counter?

Tick (✓) the correct box.

- ☐ The probability has increased.
- ☐ The probability has decreased.
- ☐ The probability has stayed the same.
- ☐ It is impossible to tell.

1 mark