Mathematics

Paper 2: reasoning

First name	
Middle name	
Last name	
Date of birth	Day Month Year
Teacher	

SAMPLE

Instructions

You **may not** use a calculator to answer any questions in this test.

Questions and answers

You have **50 minutes** to complete this test.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use the space around the question.

Some questions have a method box like this:

Show
your
method

For these questions you may get a mark for showing your method.

If you cannot do one of the questions, **go on to the next one**.

You can come back to it later, if you have time.

If you finish before the end, **go back and check your work**.

Marks

The number under each line at the side of the page tells you the maximum number of marks for each question.

1. 67 children attend chess club.

26 different children attend maths club.

Nobody attends both clubs.

There are 600 children in the school.

How many children do not attend either club?

Show your method

2. Match the numbers to their word form.

One has been done for you.

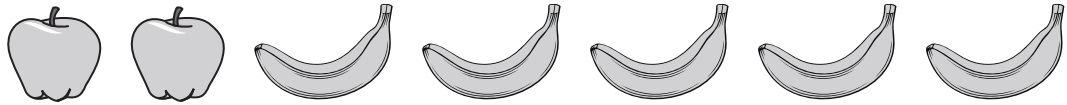|	
19,300	One thousand, nine hundred and thirty
1,930	One hundred and nine
1,090	Nineteen thousand, three hundred
190	One hundred and ninety
109	One thousand and ninety

3. In a fruit bowl, there are 2 apples for every 5 bananas.

There are 8 apples in the fruit bowl.

How many pieces of fruit are there in the fruit bowl in total?

Show your method

4. What time is shown on the clock?

| 08:55 | 07:55 | 08:11 | 19:55 |

1 mark

5. John leaves his house at 13:56

His walk to school takes 35 minutes.

What time does John arrive at school?

Show your method

:

1 mark

6. Match each percentage to the correct equivalent.

The first one has been done for you.

75% $\dfrac{2}{5}$

40%   0.75

15%   0.5

50% $\dfrac{15}{100}$
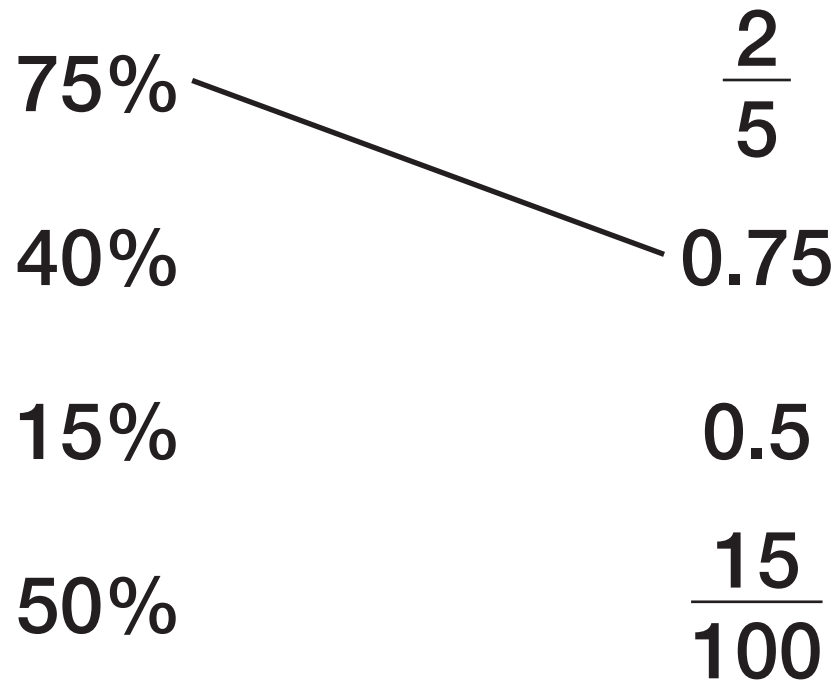
7. What is 10 more than $4\frac{2}{3}$?

1 mark

8. How many thirds are there in $4\frac{2}{3}$?
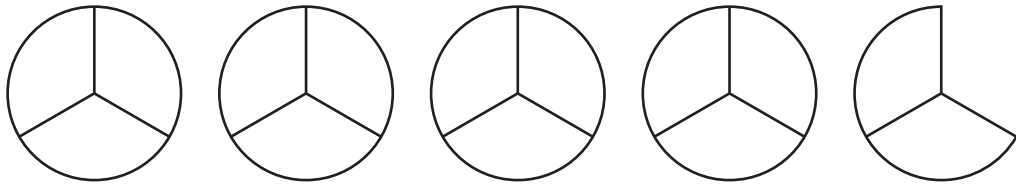
1 mark

9. Filip says there are double the amount of sixths than thirds in $4\frac{2}{3}$?

Is Filip correct?

Explain your answer.

1 mark

10. A soft toy costs £4.50

A suitcase costs ten times as much.

How much does the soft toy and suitcase cost in total?
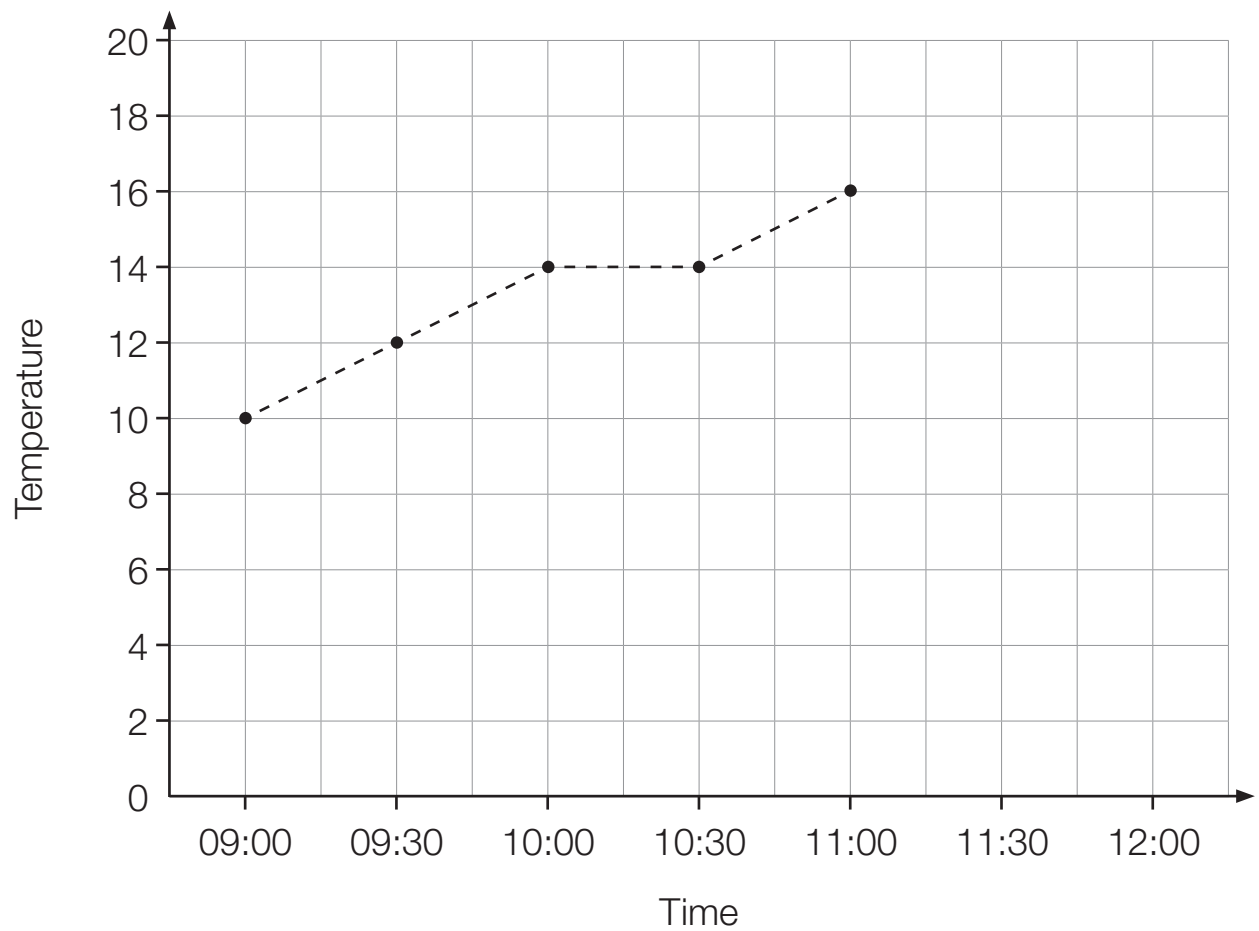
Show your method

£

2 marks

11.

Use a ruler to complete this line graph.

Time	Temperature (°C)
09:00	10
09:30	12
10:00	14
10:30	14
11:00	16
11:30	17
12:00	18
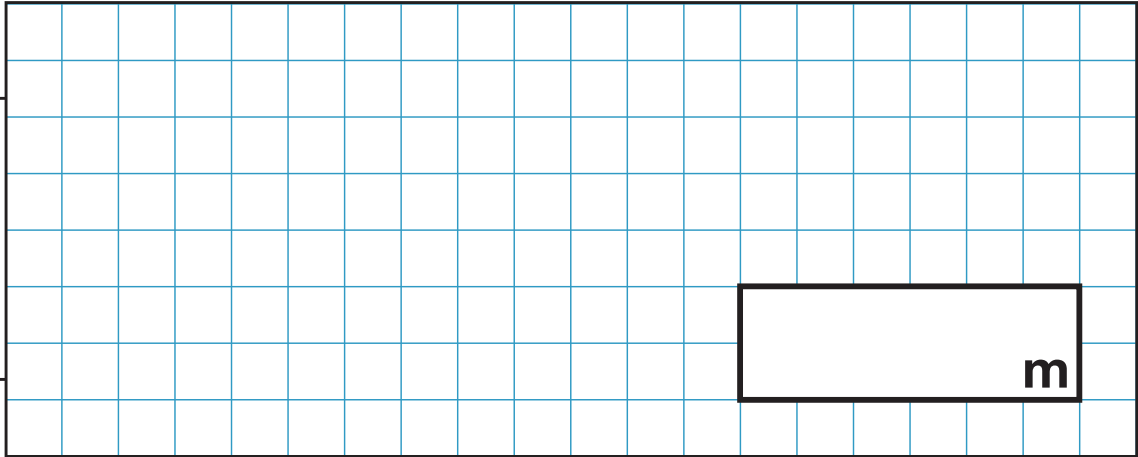
1 mark

12. Morgan is running a 10 kilometre race.

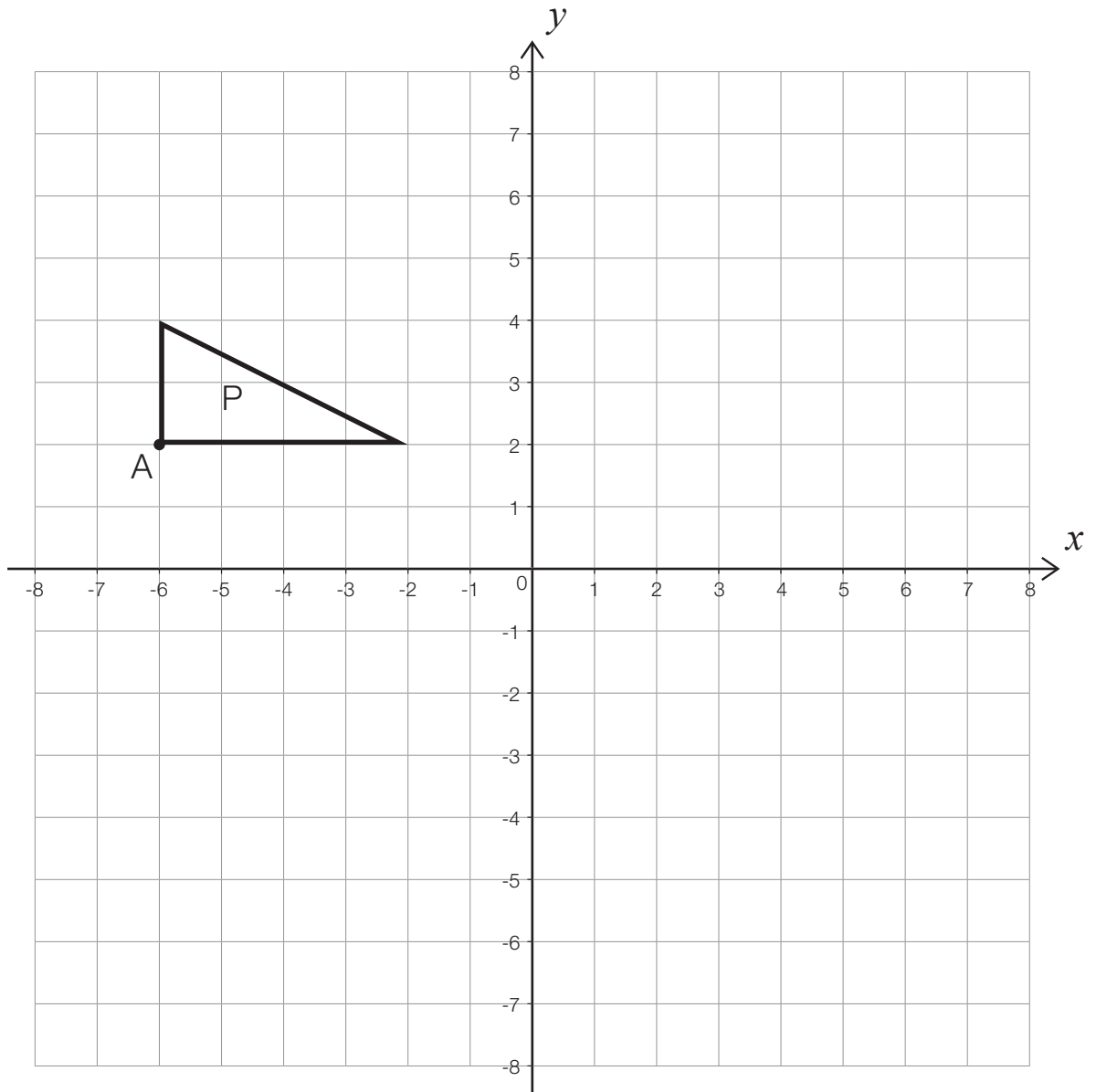So far, she has run 1,340 metres.

How far does she have left to run?

Show
your
method

m

13.

Triangle P is reflected in the x-axis

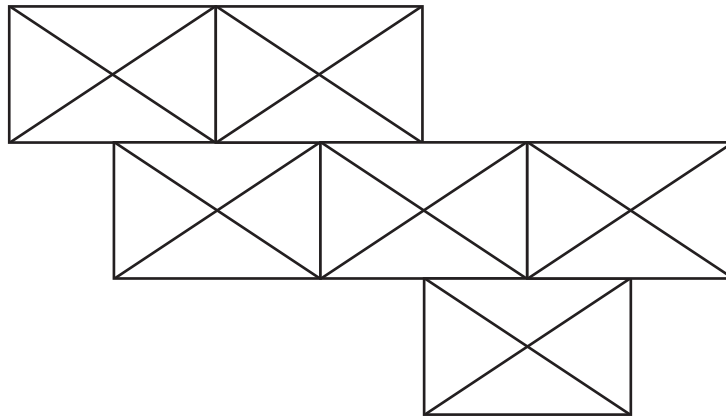Draw the reflection on the grid.

Label your shape Q.

Triangle P is now translated 7 units right and 3 units up.

What are the co-ordinates of the vertex labelled A after the translation?
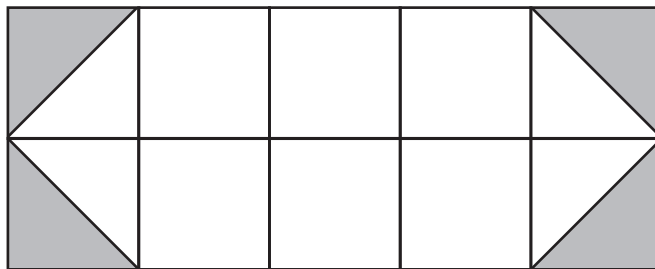
(,)

1 mark

14. Shade $\frac{2}{3}$ of the shape below.
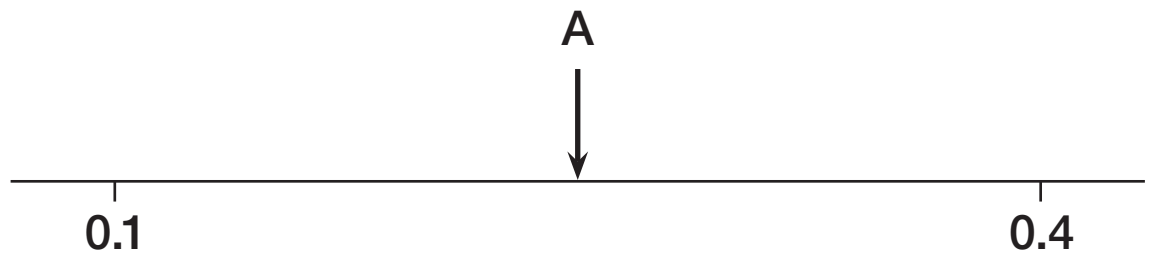
15. Sam says,

"20% of the shape is shaded."
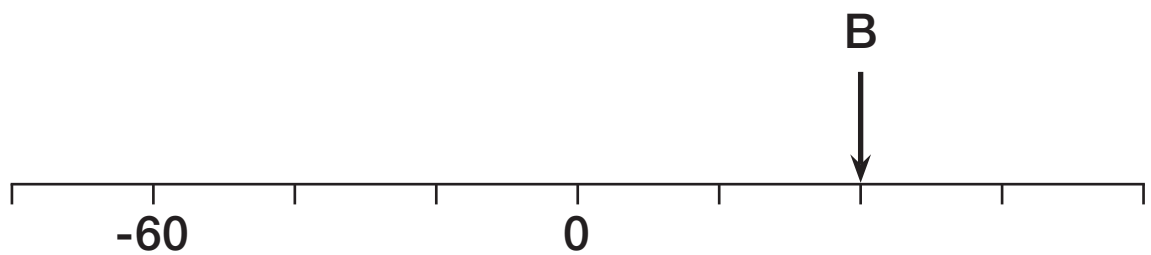

Do you agree with Sam?

Explain your answer.

16. A is half way between 0.1 and 0.4

A

0.1   0.4

What is the value of A?

1 mark

What is the value of B?

B

-60   0

1 mark

17. Complete the missing number.

$$\frac{\square}{6} \text{ of } 132 = 88$$

1 mark

Explain all the steps in your working.

1 mark

18.

A bottled drink is made up of 120 ml of juice and the rest is water.

Water makes up $\frac{3}{5}$ of the drink.

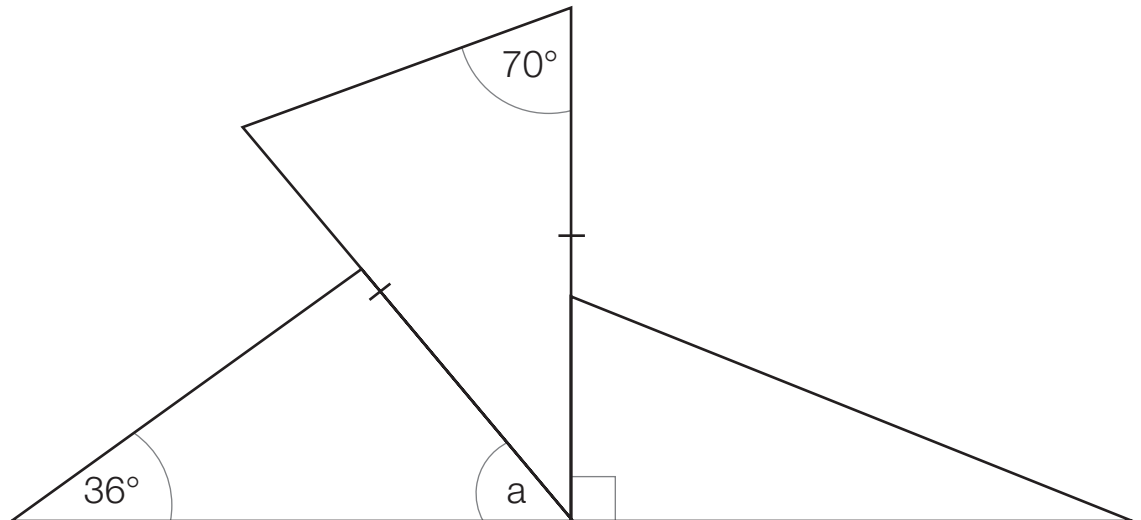How much water would be needed for 6 bottles of drink?

Show your method

_____ ml

2 marks

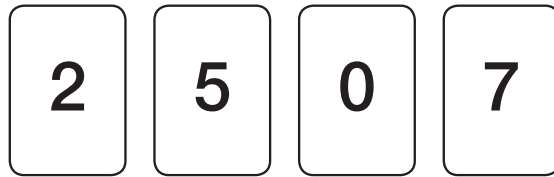19. The shape below is made of an isosceles triangle, a scalene triangle and a right-angled triangle.

Calculate the size of angle a.

Show your method

20. Ajay has these four digit cards.

| 2 | 5 | 0 | 7 |

What is the **mean** of Ajay's cards?

[   ]
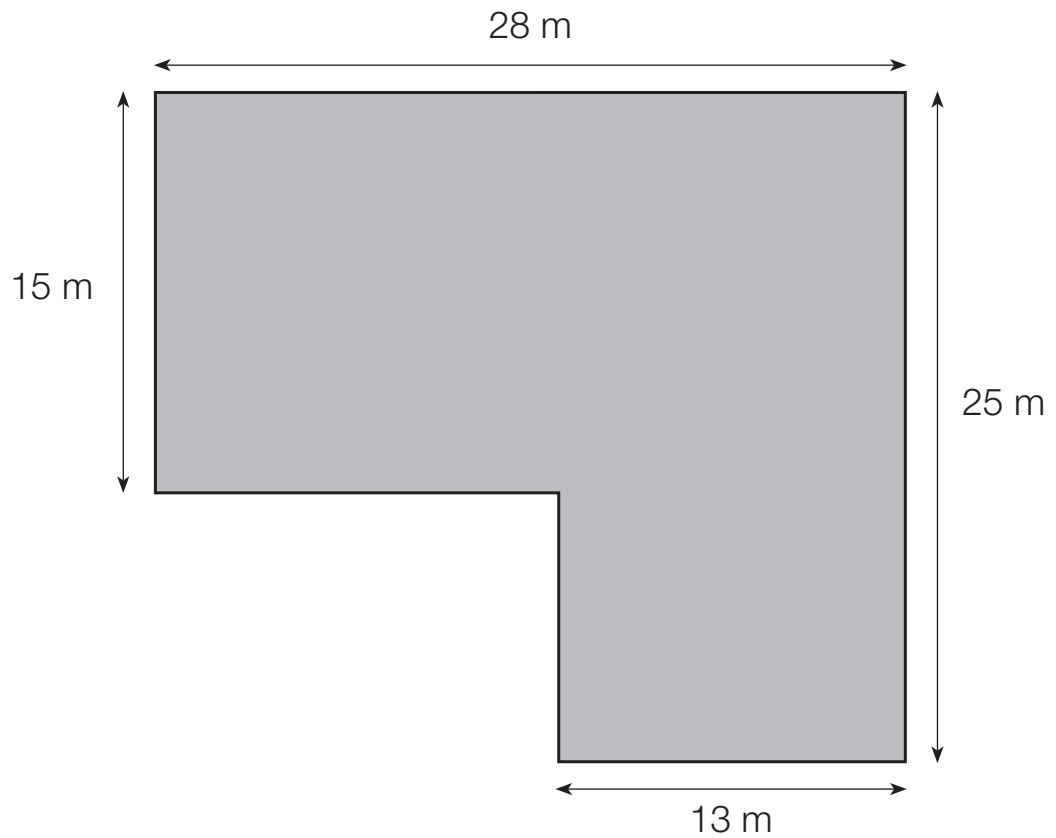
21. Ajay removes one of the cards.

The mean of the new cards is 4

Which card did he remove?

Explain your answer.

22. The diagram shows a field.

28 m

15 m

25 m

13 m

5 sheep need 350 m² of field.

Is the field big enough for 10 sheep?

Yes   No

You must show all your working out.

23.

$$2y + 3x = 12$$

If $x = 2$, find the value of y

$y = $ ☐

2 marks

24. Ben says,

"All prime numbers are odd"

Do you agree?

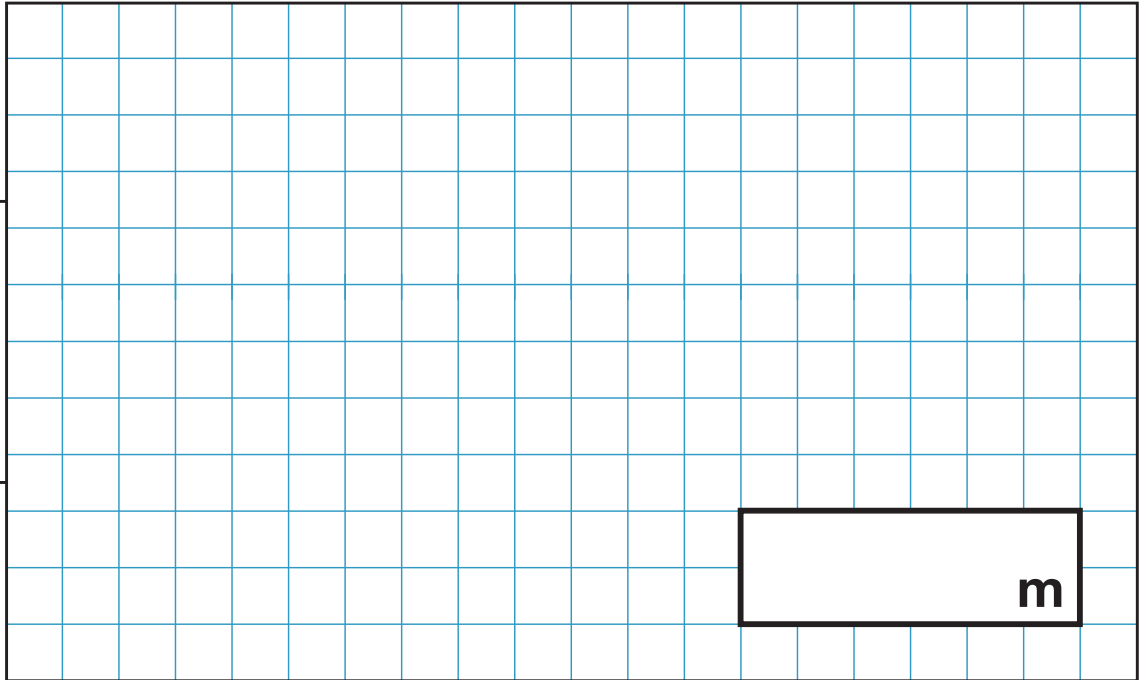Yes   No

Explain your answer.

2 marks

25. Sam buys 20 metres of fabric.

He uses $\frac{3}{10}$ of it to make a dress.
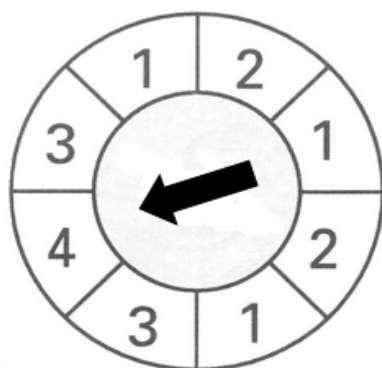
He uses $2\frac{1}{3}$ metres to make some trousers.

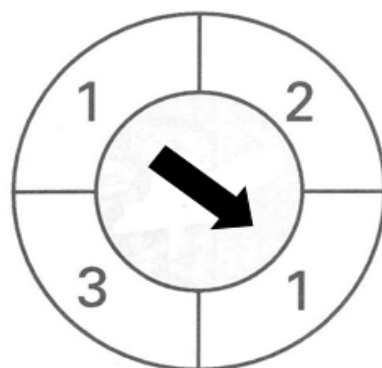How many metres does he have left?

Show your method

m

26. Lee has two spinners

A   B

A. What is the probability of spinning a 4 on spinner A?

1 mark

B. On which spinner is he more likely to get a 1?

Explain your answer.

1 mark