

LEVEL 6  
TESTS

ANSWER  
BOOKLET

# MATHEMATICS TEST

LEVEL 6 TESTS

Ma

## Paper 1 – calculator not allowed

First name			
Middle name			
Last name			
Date of birth	Day	Month	Year
Please circle one	Boy	Girl	
Year group			
School			

### YOU MAY NEED

- Pens, pencils and a rubber.
- A ruler.
- A pair of compasses.
- A protractor or angle measurer.
- Tracing paper.
- A mirror.

### REMEMBER

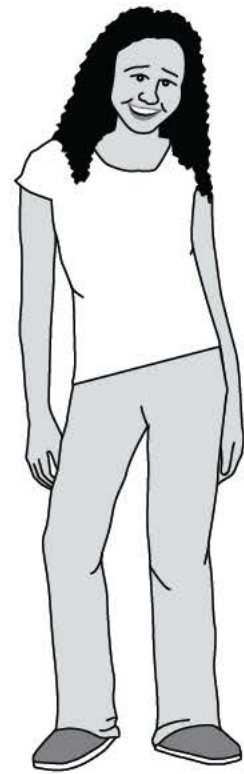
- You have 30 minutes to complete this test paper.
- You may not use a calculator for any question in this test paper.
- Try to answer all the questions.
- Write all your answers and working on the test paper – do not use any rough paper. Marks may be awarded for working.
- Check your work carefully.
- Ask your teacher if you are not sure what to do.



Lisa



Nik



Kemi

You might need to use this formula.

**Trapezium**

$$\text{Area} = \frac{1}{2}(a + b)h$$

The diagram shows a trapezium with a shorter top side labeled 'b' and a longer bottom side labeled 'a'. A vertical double-headed arrow between the two sides is labeled 'height (h)'.

# Instructions

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

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- Work as quickly and as carefully as you can.
  - You have 30 minutes for this test paper.
  - 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**.
- 

**Follow the instructions for each question carefully.**



This shows where you need to put the answer.

If you need to do working out, you can use any space on a page.

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**Some questions have an answer box like this:**




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

1

Here is information about pupils in a class.

- The total number of pupils is 30
- 26 of the pupils do not wear glasses.
- A quarter of the pupils who do wear glasses are boys.
- There are 2 more boys than girls.

Use the information to fill in the missing numbers in the table below.

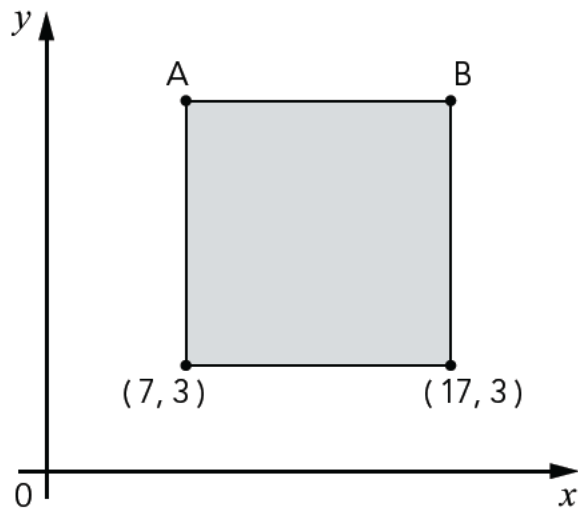


	Number who <b>do</b> wear glasses	Number who <b>do not</b> wear glasses	Total
Number of boys			
Number of girls			
Total			30

(2 marks)

2

The shaded shape is a **square**.



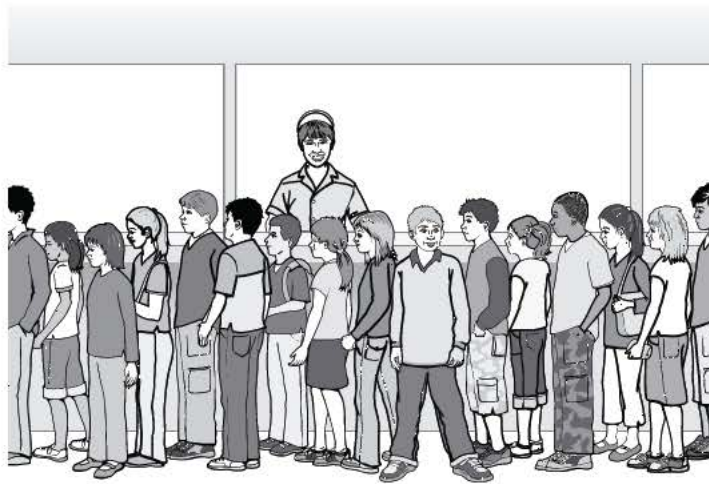
Not drawn  
accurately

What are the coordinates of A and B?



A ( \_\_\_\_\_ , \_\_\_\_\_ )    B ( \_\_\_\_\_ , \_\_\_\_\_ ) (2 marks)

3



There are 25 children in the lunch queue, including Nik.

Nik says,

*'There are twice as many children in front of me as there are behind me'.*

How many children are **in front** of Nik?

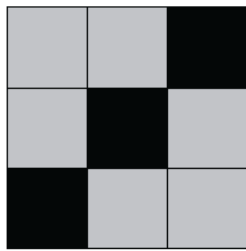
 Show your working

children

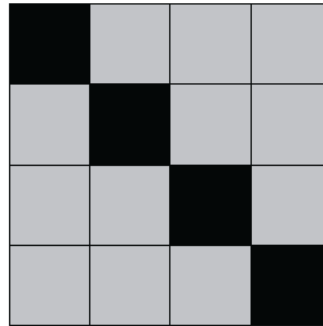
(2 marks)

4

These patterns are drawn on square grids.



Pattern A



Pattern B

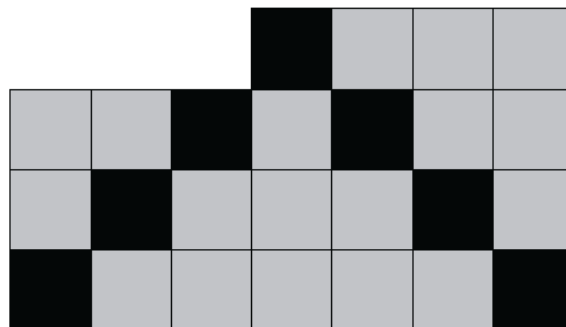
In pattern A, the **ratio** of black squares to grey squares is **1 : 2**

What is the ratio of black squares to grey squares in pattern B?



(1 mark)

Now look at this new pattern.



What **percentage** of the new pattern is **black**?



(1 mark)

5

Here are three equations.

$$a + b + c = 30$$

$$a + b = 24$$

$$b + c = 14$$

What are the values of  $a$ ,  $b$  and  $c$ ?



$a =$    $b =$    $c =$   (2 marks)



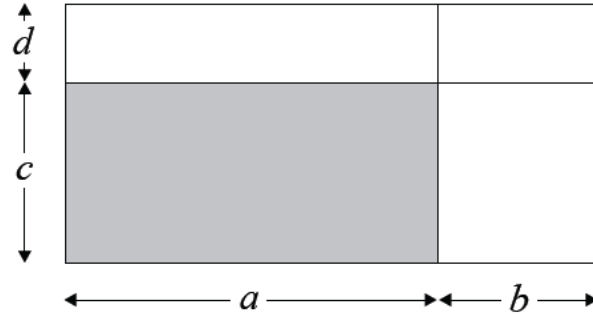
6

The diagrams show a rectangle divided into different parts.

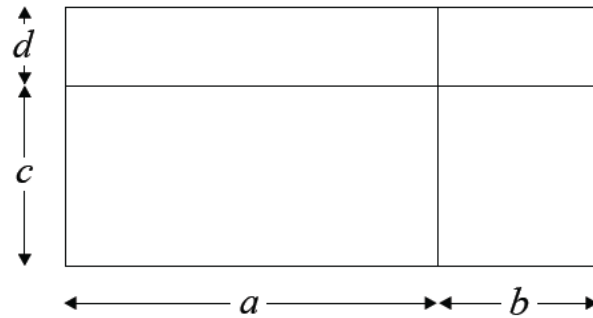
On each, **shade the area** represented by the expression.

The first one is done for you.

$ac$



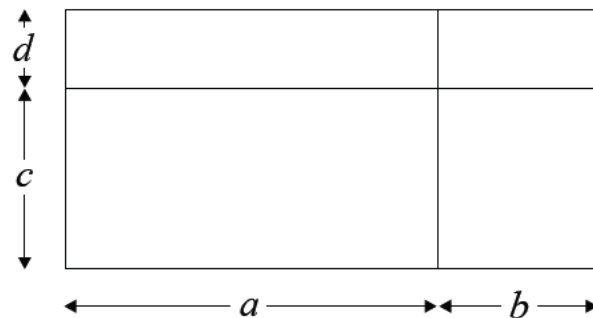
$ad + bd$



(1 mark)



$b(c + d)$

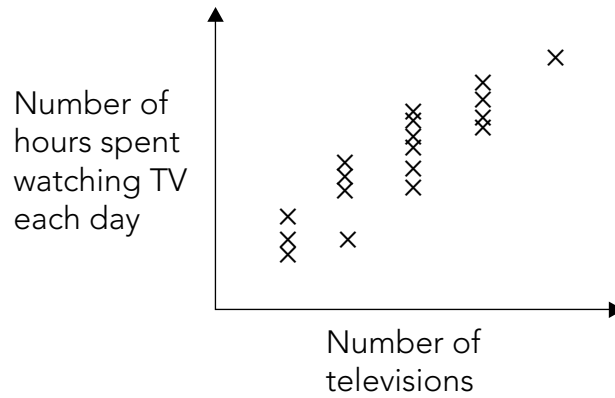


(1 mark)

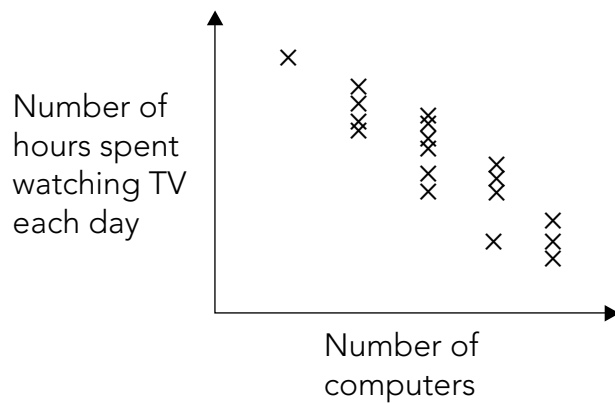
# 7

Here are three scatter diagrams, labelled A, B and C.

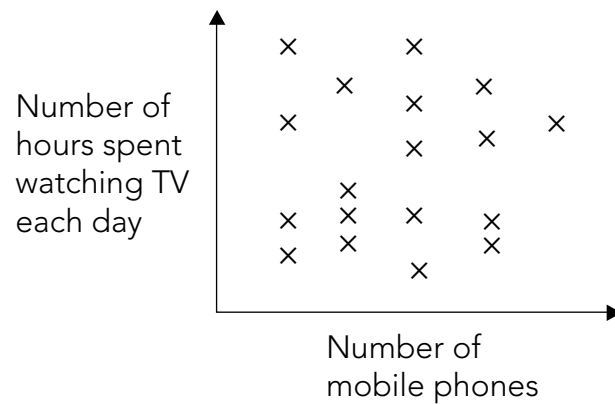
**Scatter diagram A**



**Scatter diagram B**



**Scatter diagram C**



The questions are on the next page.

Kemi writes:

Scatter diagram **A** shows that the more televisions a person has in  
their home the more hours they spend watching television.

Now complete the sentences below.



Scatter diagram **B** shows that \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ (1 mark)



Scatter diagram **C** shows that \_\_\_\_\_

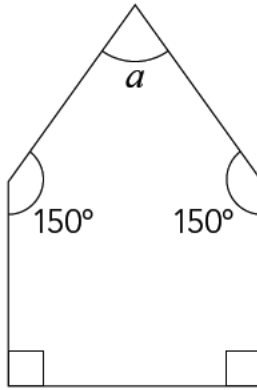
\_\_\_\_\_

\_\_\_\_\_ (1 mark)

8

The diagram shows a pentagon.

Not drawn accurately



Each side of the pentagon is the **same length**.

Is the shape a **regular** pentagon?

Circle Yes or No.



Yes / No

Explain your answer.



(1 mark)

Work out the size of angle  $a$



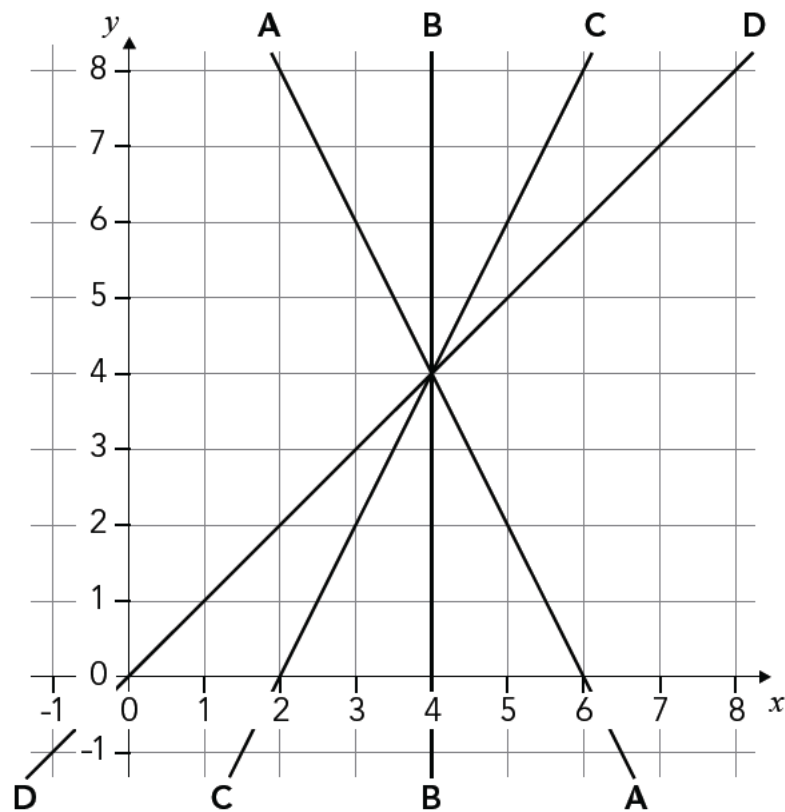
Show your working

$a =$

(2 marks)

9

The diagram shows four straight lines, A, B, C and D.



Which line has the equation  $y = x$ ?

Circle A, B, C or D.



A / B / C / D

Which line has the equation  $x = 4$ ?

Circle A, B, C or D.



A / B / C / D (1 mark)

Draw a horizontal straight line through the point (4, 4) and write its equation.

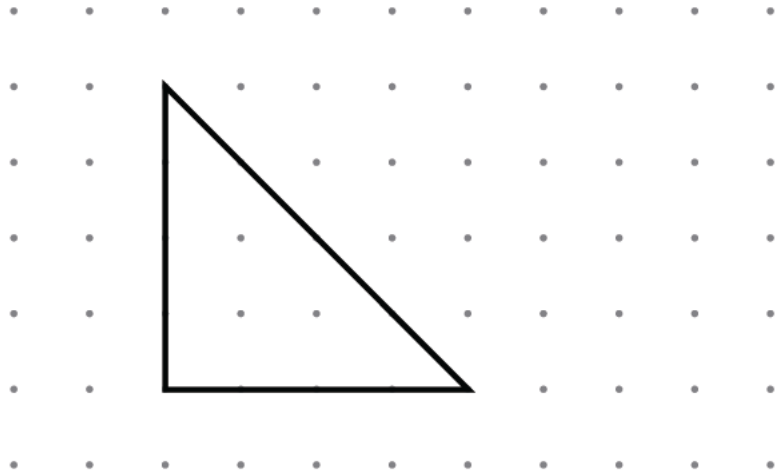


(1 mark)

10

Here is a triangle.

**Two** of its sides are 4cm and **two** of its angles are  $45^\circ$



**Join dots** to make a different triangle.

Make **only one** of its sides 4cm and **only one** of its angles  $45^\circ$



(1 mark)

**11**

Write the missing numbers.



$$\frac{\boxed{\phantom{000}}}{160} = 0.1$$

(1 mark)



$$\frac{160}{\boxed{\phantom{000}}} = 0.2$$

(1 mark)

**12**

Here are four numbers.

Their **mean** is 4 and their **range** is 0Write four numbers that have a **mean** of 4 and a **range** of 4

□ □ □ □

(1 mark)

13

A dragon lived in a cave.

The dragon **doubled** in size every day.

After **20 days** the dragon filled the cave.

After how many days did the dragon **half-fill** the cave?



After  days

(1 mark)

14

I am thinking of a number that is not zero.

I **multiply** my number by  $-5$

Tick (✓) the statement below that is true.



The answer must be positive.

The answer must be negative.

The answer could be positive or negative.

Explain how you know.



Large cloud-shaped area for writing an explanation.

(1 mark)



**END OF TEST**

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QCDA/11/5452

Optional level 6 tests | Mathematics paper 1