Ma

YEAR

8

LEVELS

4–6

TEST

A

Mathematics

Test A

Calculator **not** allowed

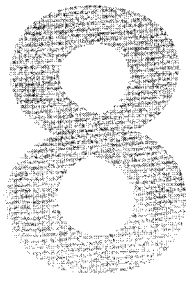
Please read this page, but do not open the booklet until your teacher tells you to start. Write your details in the spaces below.

Name _____

Class _____

Teacher _____

Date _____



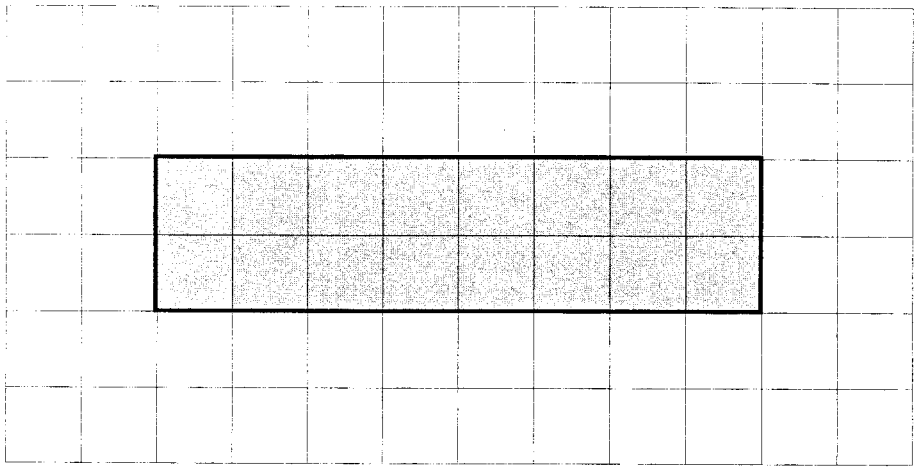
Remember

- The test is 50 minutes long.
- You may **not** use a calculator for any question in this test.
- You will need: pen, pencil, rubber, ruler, protractor or angle measurer and a pair of compasses.
- Some formulae you might need are on page 2.
- This test starts with easier questions.
- Try to answer all the questions.
- Write all your answers and working on the test paper – do not use any rough paper.
- Check your work carefully.
- Ask your teacher if you are not sure what to do.

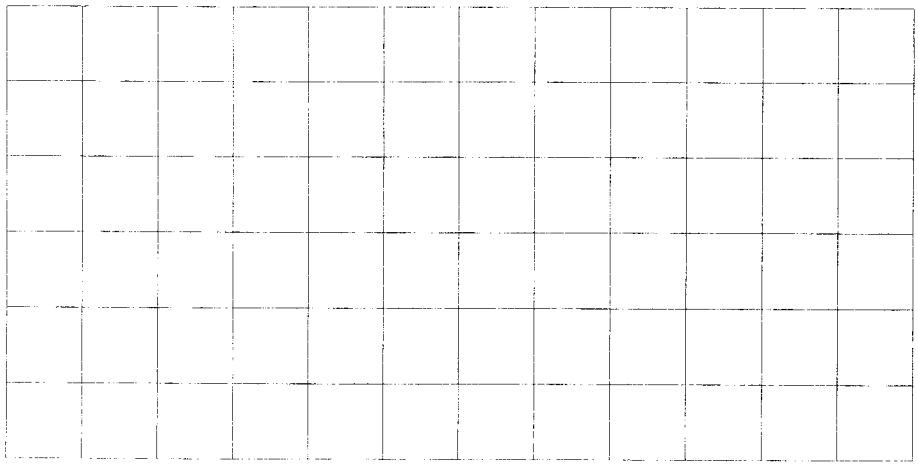
For marker's use only | Total marks | |

QCA/00/641

1 The diagram shows a rectangle, drawn on a square grid.

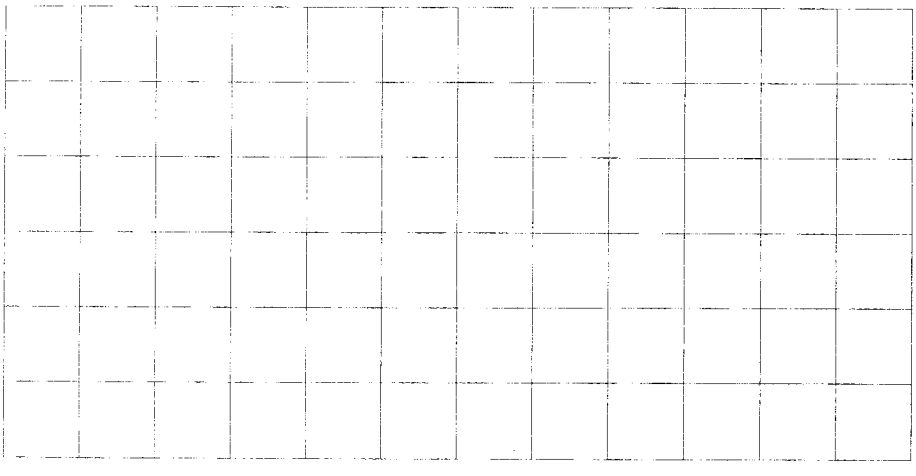


(a) Draw a **square** that has the **same area** as the rectangle.



1 mark

(b) Draw a **square** that has the **same perimeter** as the rectangle.



1 mark

2 (a) Multiply 78 by 6

. . . . . .

1 mark

(b) Divide 432 by 8

. . . . . .

1 mark

(c) Double 8.7 is bigger than 10.5

How much bigger?

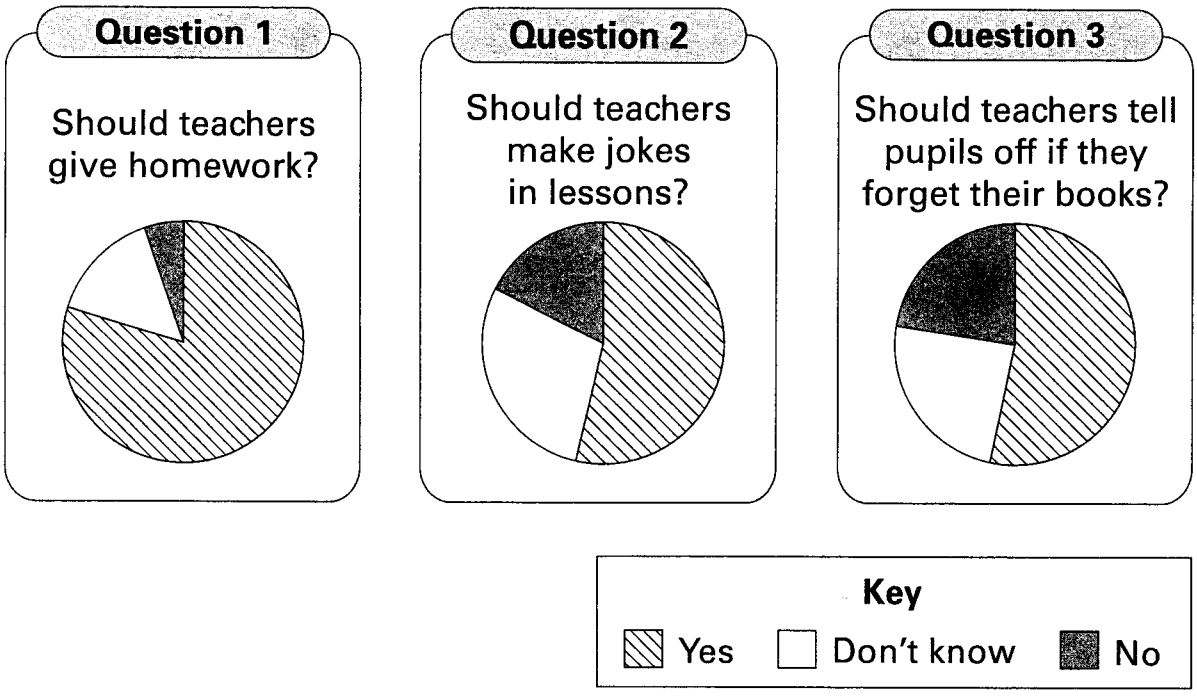
Show your working.

. . . . .

. . . . . .

2 marks

3 The pie charts show how pupils answered three questions about teachers.



(a) What was the **least common** answer to Question **2**?

. . . . . .

1 mark

(b) What was the **modal** answer to Question **3**?

. . . . . .

1 mark

(c) About what proportion of pupils answered 'yes' to Question **1**?

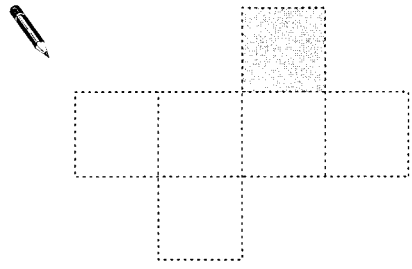
. . . . . .

1 mark

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

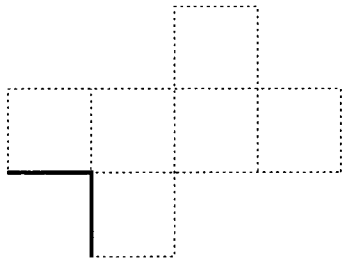
When the net is folded, which face will be **opposite** the shaded face?

Put a tick (✓) inside the correct face.



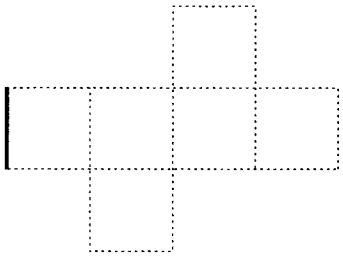
1 mark

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

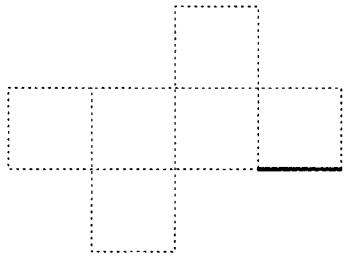


Which edge will join the one shown in bold on the nets below?

Show your answers by drawing a line on each net.



1 mark



1 mark

5 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

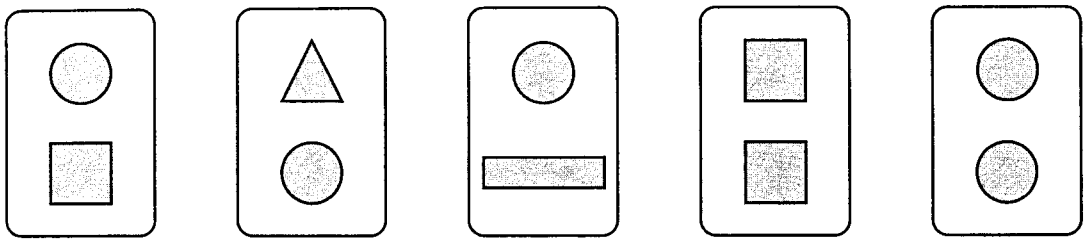
−2	. . . . .	. . . . .
3	1	. . . . .
2	. . . . .	4

. . . .

. . . .

2 marks

6 Look at these five cards.



I am going to choose one of these cards at random.

(a) What is the probability that the card will show a **triangle**?

. . . . . .

1 mark

(b) What is the probability that the card will show **at least one circle**?

. . . . . .

1 mark

(c) I **remove** the card with **two squares** on it. Four cards are left.

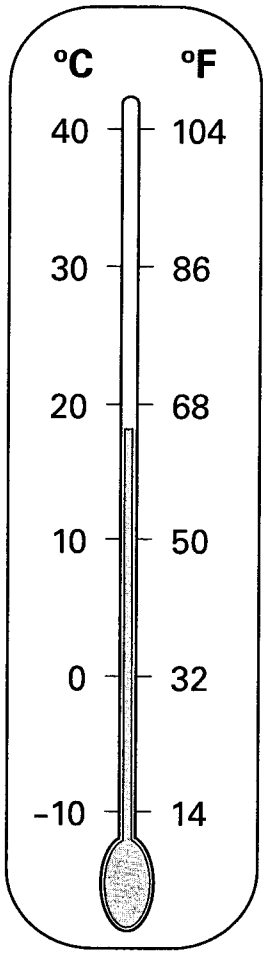
I am going to choose one of these four cards at random.

Now what is the probability that the card will show **at least one circle**?

. . . . . .

1 mark

7 The thermometer shows temperatures in °C and °F



Work out the missing values.

50°C is the same temperature as . . . . . **°F** . . . . 1 mark

–20°C is the same temperature as . . . . . **°F** . . . . 1 mark

. . . . . **°C** is the same temperature as **41°F** . . . . 1 mark

8 (a) What is **30%** of **250**?

. . . . . .

1 mark

(b) I'm thinking of a number.

10% of my number is **84**

Show calculations and explain how you can work out that **15%** of my number is **126**

1 mark

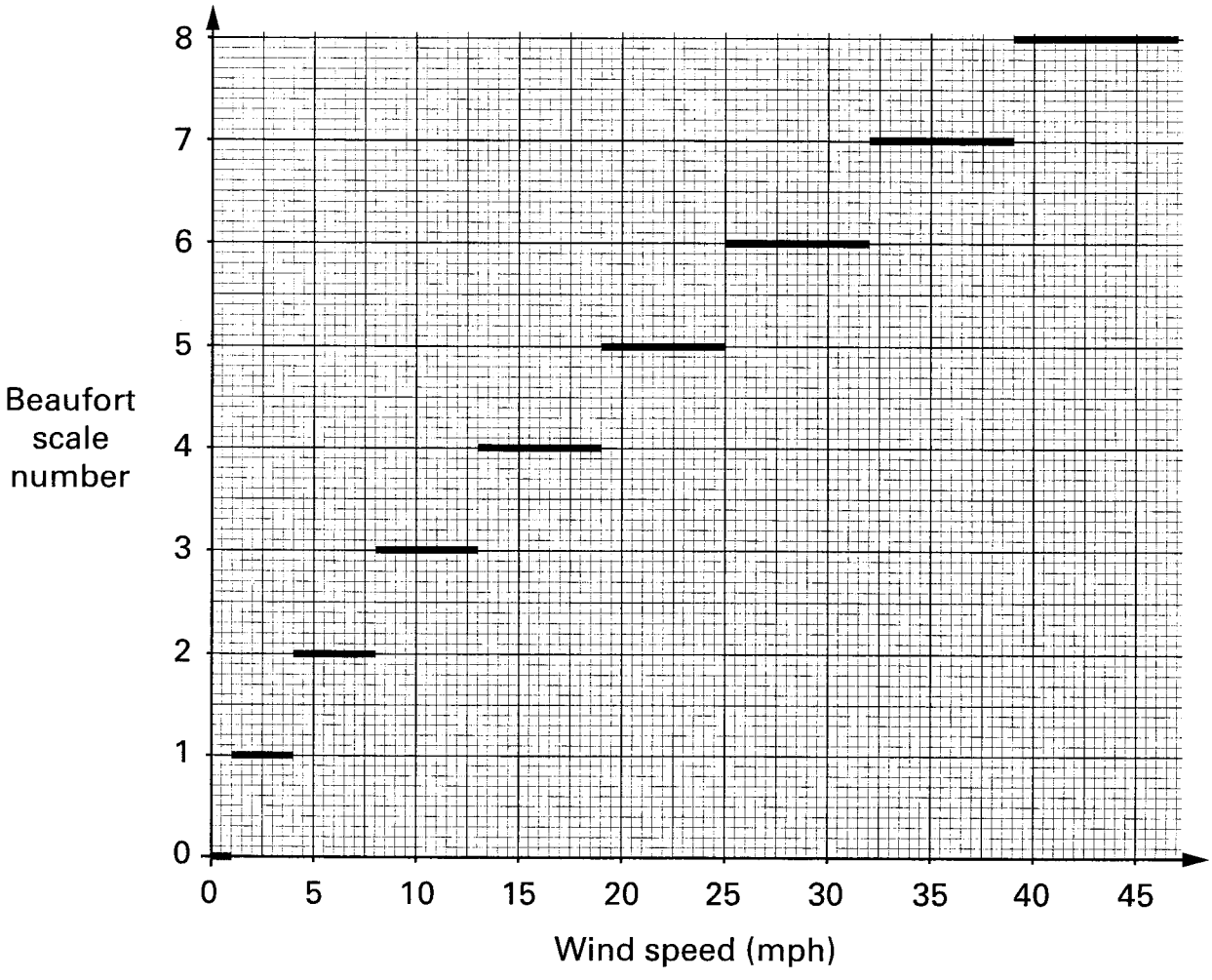
What is $\mathbf{12\frac{1}{2}}$% of my number?

. . . . . .

1 mark

9 Wind speed is described using the Beaufort scale.

The graph shows information about part of this scale.



(a) At **20 mph**, the Beaufort scale number is **5**

Complete this sentence:

At **40 mph**, the Beaufort scale number is . . . . . .

1 mark

(b) You cannot tell from this graph what the Beaufort scale number is when the wind speed is **25 mph**.

Explain why not.

1 mark

10 Complete the missing values in this table.

x	$x + 1$	$2x$	$2x - 1$	$2(x - 1)$
3		6		
	9			
			29	

. . . .

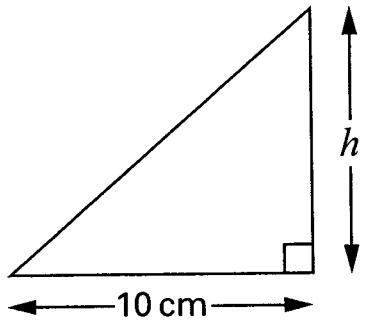
. . . .

. . . .

3 marks

11 The **area** of this triangle is **40** cm^2

What is the **height**, h, of the triangle?



Not drawn accurately

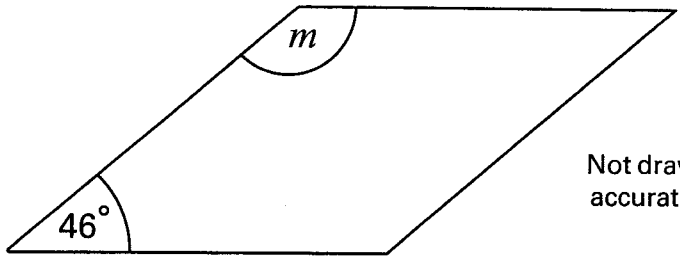
. . . . . cm

. . . .

1 mark

12 (a) The diagram shows a **rhombus**.

One angle is 46°



Not drawn accurately

Calculate the size of the angle marked m

Show your working.

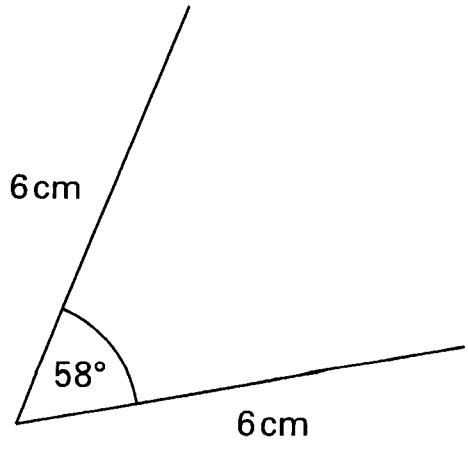
. . . . .

. . . . . ° . . . . .

2 marks

(b) Complete the accurate drawing below to make a **rhombus** of side length **6 cm**.

Show your method, either by showing working or by leaving in your construction lines.



. . . . .

. . . . .

2 marks

13 (a) Complete the table.

The first one is done for you.

The number of **quarters** in $1\frac{1}{4}$	5
The number of **quarters** in $4\frac{1}{2}$	
The number of **tenths** in $3\frac{3}{10}$	
The number of **tenths** in $3\frac{3}{5}$	

1 mark

1 mark

1 mark

(b) Work out $3\frac{3}{5} \div \frac{3}{10}$

Show your working.

. . . . .

. . . . . .

2 mark

14 Which two numbers have a **mean** of **10** and a **range** of **8**?

The numbers are ☐ and ☐

. . . .

. . . .

2 marks

15 Work out the value of $(a + b)(a - b)$ when $a = 6.5$ and $b = 3.5$

. . . . . .

. . . .

1 mark

16 (a) You can write the equation $y = x + 4$ in different ways.

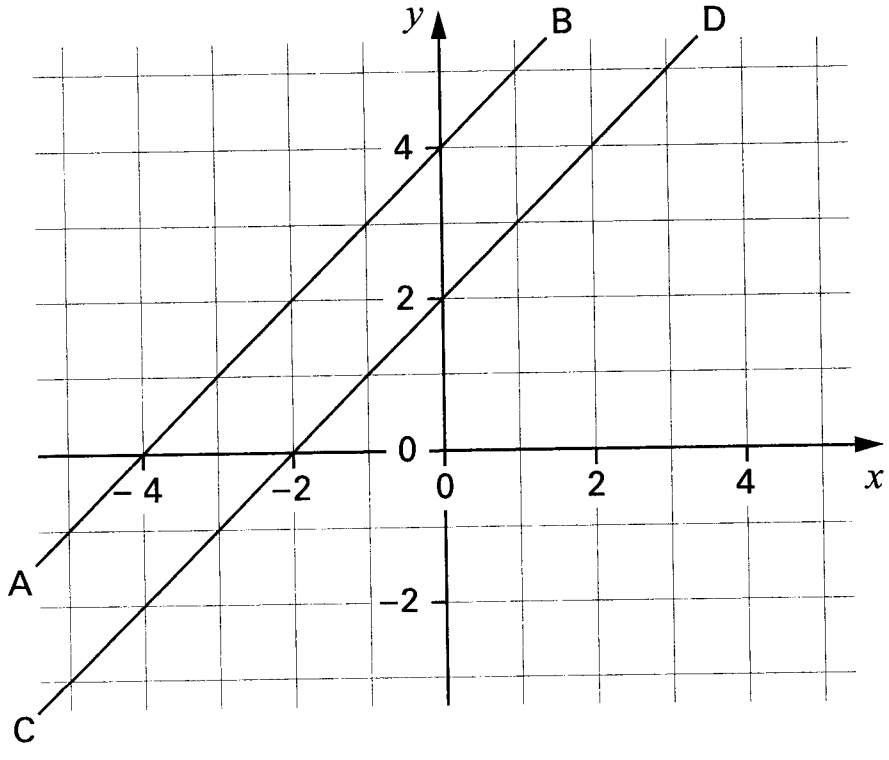
Circle the correct ways below.

$x + y = 4$ $\quad$ $x = 4 + y$ $\quad$ $y - x = 4$

$y + 4 = x$ $\quad$ $x = y - 4$

2 marks

(b) The equation of line **AB** is $y = x + 4$



Write an equation that describes line **CD**

1 mar

17 Calculate **57.3 × 2.1**

Show your working.

. . . . .

. . . .

2 marks

Please turn over for the next question

18 Solve these equations.
Show your working.

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

$y =$ . . . . .

2 marks

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

$y =$ . . . . .

2 marks