Ma

KEY STAGE 3

TIER 3–5

2007

Mathematics test

Paper 1

Calculator **not** allowed

First name _____

Last name _____

School _____

Remember

- The test is 1 hour long.
- You **must not** use a calculator for any question in this test.
- You will need: pen, pencil, rubber and a ruler.
- 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. Marks may be awarded for working.
- Check your work carefully.
- Ask your teacher if you are not sure what to do.

For marker's use only

TOTAL MARKS	

Instructions

Answers

This means write down your answer or show your working and write down your answer.

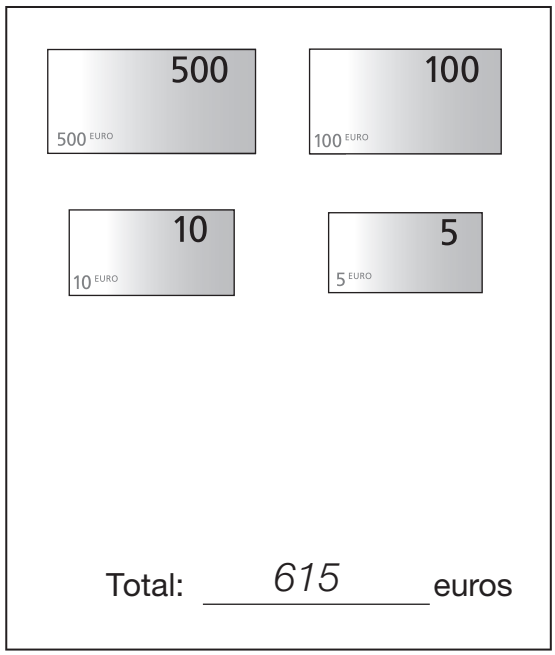
Calculators

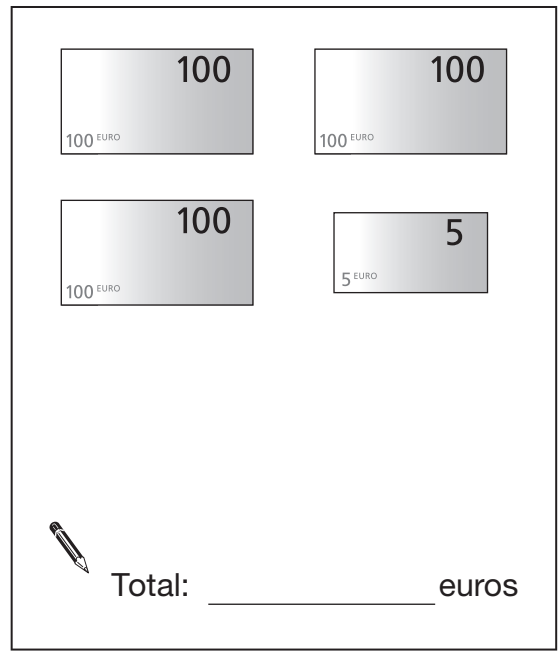
You **must not** use a calculator to answer any question in this test.

1. This question is about money called euros.

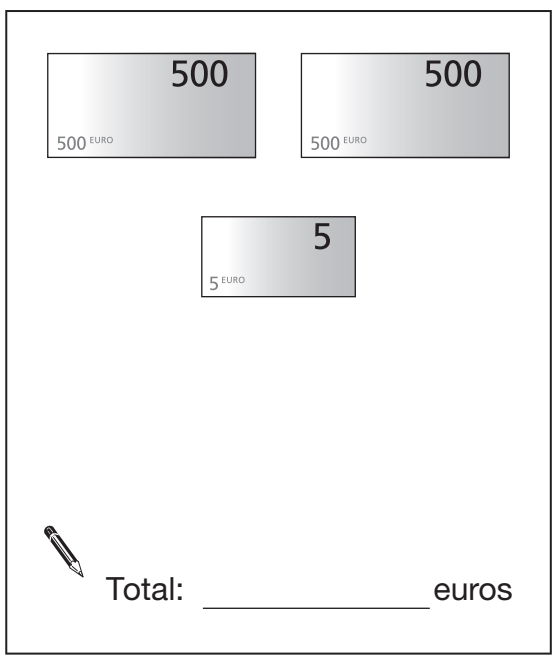
Write the total number of euros in each box.

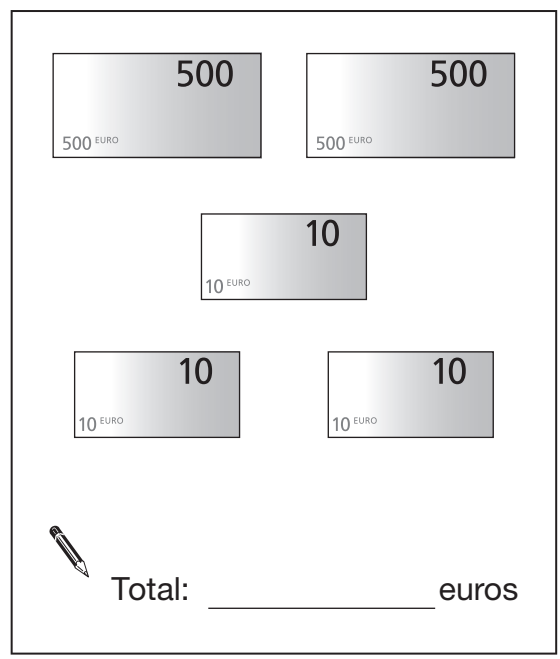
The first one is done for you.





1 mark





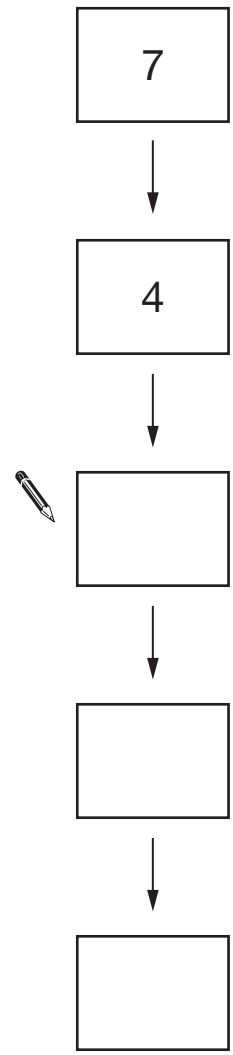
1 mark

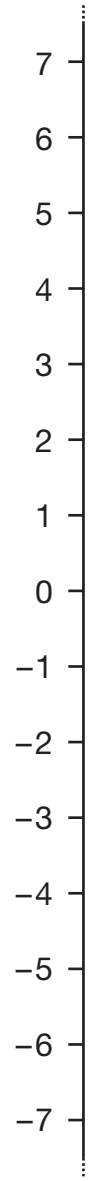
1 mark

2. A sequence of numbers **decreases by 3** each time.

Write the missing numbers in the sequence below.

You can use the number line on the right to help you.





2 marks

3. Here is part of the 36 times table.

1	×	36	=	36
2	×	36	=	72
3	×	36	=	108
4	×	36	=	144
5	×	36	=	180
6	×	36	=	216
7	×	36	=	252
8	×	36	=	288
9	×	36	=	324
10	×	36	=	360

Use the 36 times table to help you work out the missing numbers.

288 ÷ 8 = _____ 1 mark

180 ÷ 36 = _____ 1 mark

11 × 36 = _____ 1 mark

4. The table shows feeding times for some animals in a zoo.

	Start of feeding times	Length of feeding times
Elephants	11:15 am 2:15 pm 3:20 pm	15 minutes
Giraffes	12:20 pm 2:30 pm	15 minutes
Otters	1:00 pm	10 minutes
Seals	1:00 pm 4:00 pm	10 minutes
Tigers	2:30 pm	30 minutes

(a) The first feeding time for **giraffes** starts at 12:20 pm.

At what time does it **finish**?

_____ : _____

1 mark

(b) One feeding time **finishes** at 3:00 pm.

Which animal's feeding time is this?

_____

1 mark

(c) A visitor arrives at the zoo at **1:45 pm**.

How many minutes later does the next feeding time for **elephants** start?

_____ minutes

1 mark

(d) A different visitor arrives at the zoo at **12:30pm**.

She wants to watch feeding times for **elephants**, **otters and seals** that day.

Write three feeding times that she could watch.

Elephants at _____ : _____

Otters at _____ : _____

Seals at _____ : _____

1 mark

5. Work out

64 + 57 = _____

1 mark

64 − 57 = _____

1 mark

6. In America, there are coins each worth 25 cents.

These coins are called **quarters** because four of them make one dollar.

(a) Altogether, how many quarters make **3 dollars**?

_____

1 mark

(b) Laura has **20 quarters**.

How many dollars is that?

_____

1 mark

(c) Dev wants to change **10 dollars** into quarters.

How many quarters should he get?

_____

1 mark

7. (a) Tick (✓) all the numbers below that **divide by 5** with no remainder.

☐ 12 ☐ 15 ☐ 16 ☐ 20 ☐ 30

1 mark

(b) Tick (✓) all the numbers below that **divide by 3** with no remainder.

☐ 12 ☐ 15 ☐ 16 ☐ 20 ☐ 30

1 mark

(c) Tick (✓) all the numbers below that **divide by 15** with no remainder.

☐ 12 ☐ 15 ☐ 16 ☐ 20 ☐ 30

1 mark

8. The table shows the approximate populations of five different places.

Place	Approximate population
London	7 000 000
Sheffield	700 000
Harrogate	70 000
Ash Vale	7 000
Binbrook	700

(a) Which of the places has a population of about **seventy thousand**?

_____

1 mark

(b) Use the table to complete these sentences.

The population of **Harrogate** is about **10 times** as big as

the population of _____

The population of _____ is about **100 times** as big as

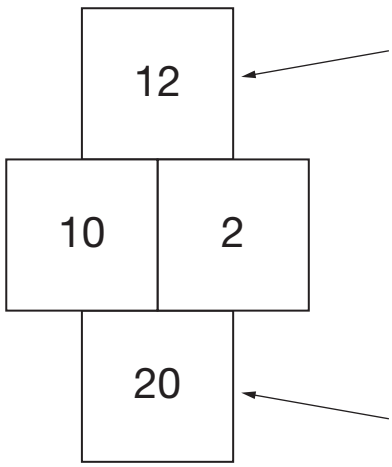
the population of **Harrogate**.

The population of **Sheffield** is about _____ **times** as big as

the population of **Ash Vale**.

2 marks

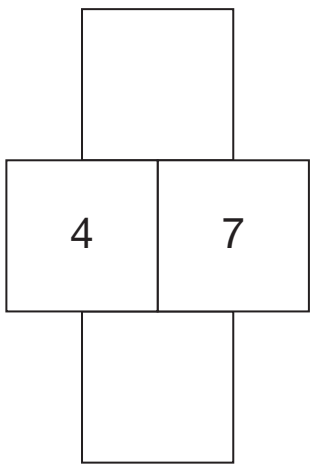
9. Here are the rules for a number grid.

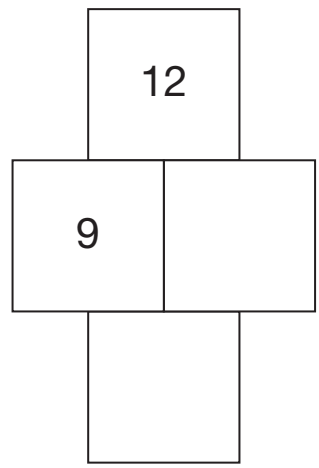


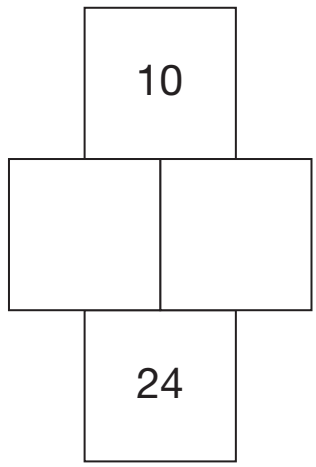
This number is the **sum** of the numbers in the middle row.

This number is the **product** of the numbers in the middle row.

Use the rules to write the missing numbers in these number grids.



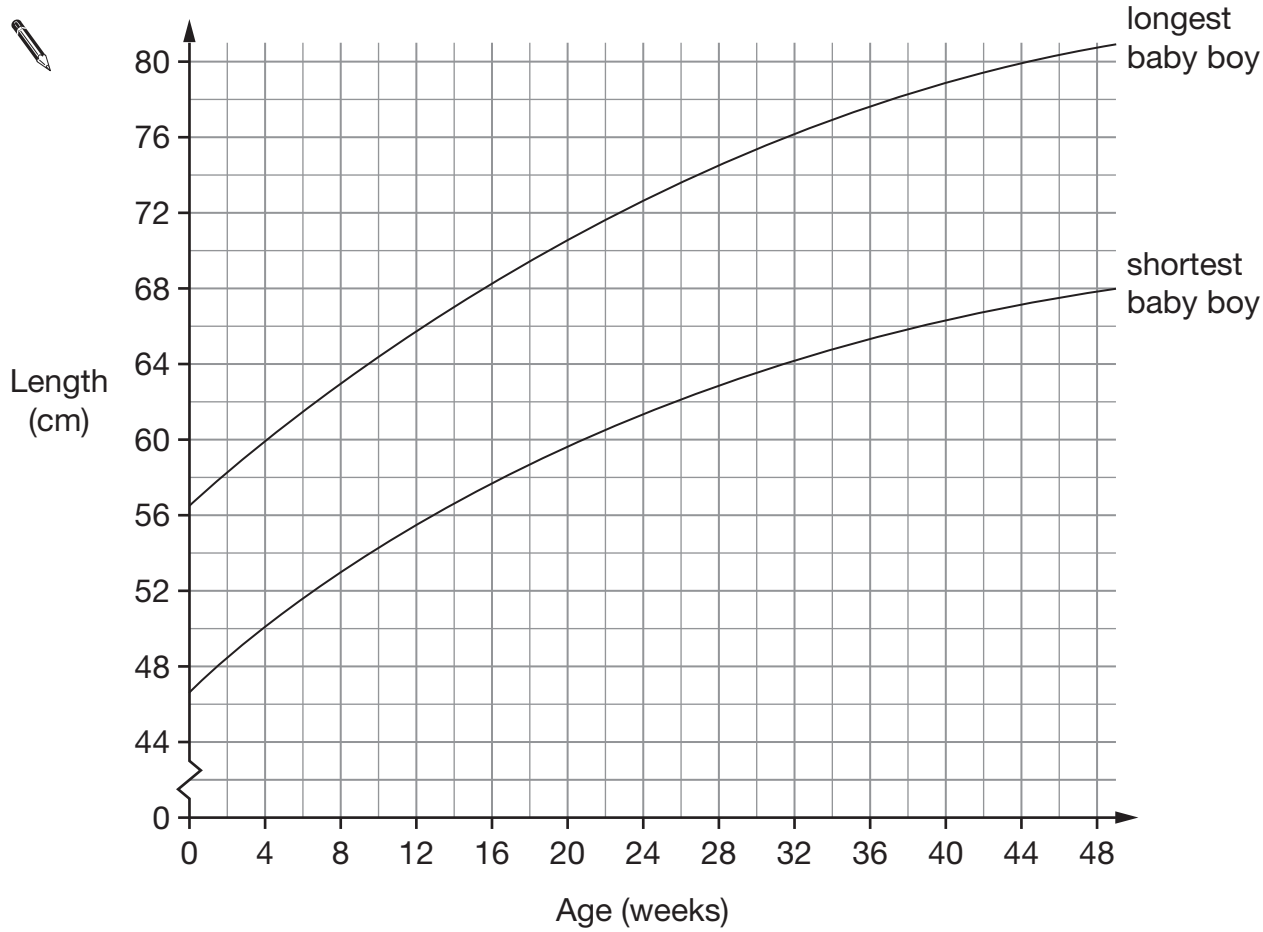




3 marks

10. The lengths of babies are measured at different ages.

The graph shows the longest and shortest a baby boy is likely to be.



(a) Write the missing numbers below.

A baby boy is **8 weeks old**.

The **longest** he is likely to be is about _____ cm.

1 mark

The **shortest** he is likely to be is about _____ cm.

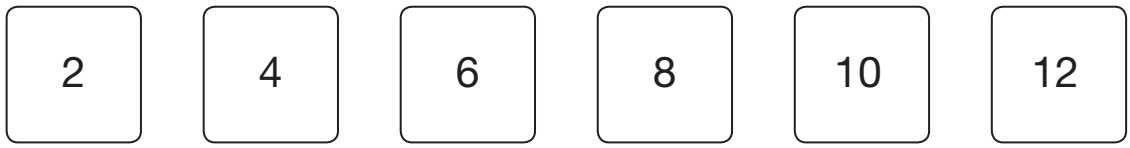
1 mark

(b) A **34 week** old baby boy is **72 cm** long.

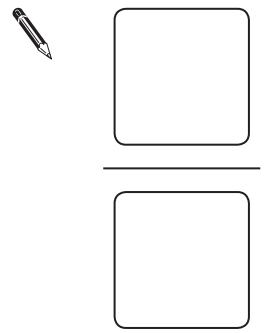
Put a cross on the graph to show this information.

1 mark

11. Here are six number cards.

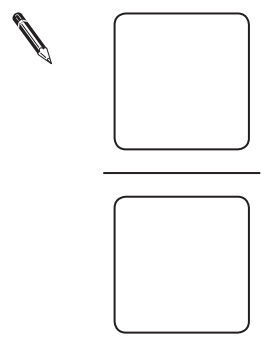


(a) Choose two of these six cards to make a fraction that is equivalent to $\frac{1}{3}$



1 mark

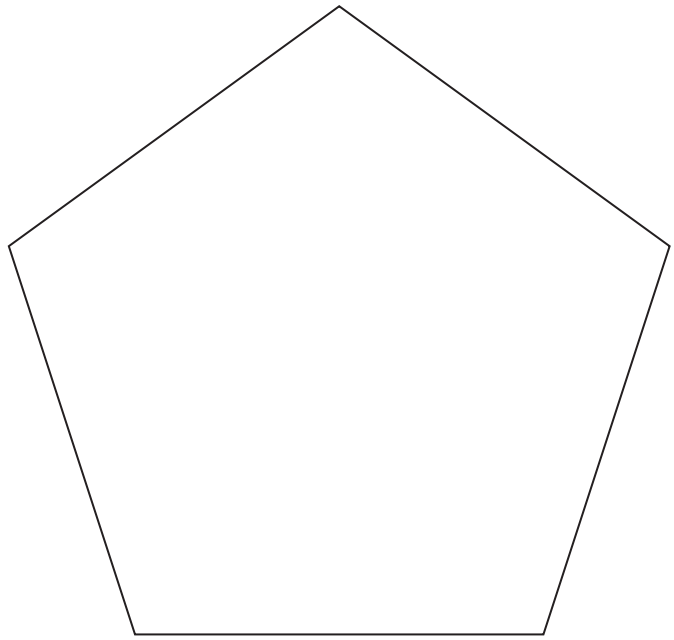
(b) Choose two of these six cards to make a fraction that is **greater than** $\frac{1}{2}$ but **less than 1**



1 mark

12. The shape below is a regular pentagon.

All five sides are exactly the same length.



Measure accurately one of the sides, then work out the **perimeter** of the pentagon.

1 mark

1 mark

Perimeter = cm

1 mark

13. (a) A **three-digit** number is a **multiple of 4**

What could the number be?

Give an example.

Now give a **different** example.

1 mark

(b) A **two-digit** number is a **factor of 100**

What could the number be?

Give an example.

1 mark

Now give a **different** example.

1 mark

14. (a) Write the answer to this calculation.

2.5	+	2.5	+	2.5	=		

1 mark

(b) Now write a number in each box to make this calculation correct.

The three numbers must be the **same**.

	+		+		=	4.5	

1 mark

15. Sam says:

> The **only** four-sided shape with four right angles is a square.

Is Sam correct?

☐ Yes ☐ No

Explain your answer.

1 mark

16. (a) When $x = 8$, what is the value of $5x$?

Tick (✓) the correct box below.

☐ 5 ☐ 13 ☐ 40 ☐ 58 ☐ None of these

1 mark

(b) When $x = 8$, what is the value of $3x - x$?

Tick (✓) the correct box below.

☐ 0 ☐ 3 ☐ 16 ☐ 30 ☐ None of these

1 mark

(c) When $x = 8$, what is the value of x^2?

Tick (✓) the correct box below.

☐ 8 ☐ 10 ☐ 16 ☐ 64 ☐ None of these

1 mark

17. Lisa uses a grid to multiply **23** by **15**

×	**20**	**3**
10	200	30
5	100	15

200 + 100 + 30 + 15 = 345

Answer: **345**

Now Lisa multiplies two different numbers.

Complete the grid, then give the answer below.

×	_____	**40**	**3**
30	_____	_____	_____
_____	600	_____	18

Answer: _____

3 marks

18. Fred has a bag of sweets.

Contents
3 yellow sweets
5 green sweets
7 red sweets
4 purple sweets
1 black sweet

He is going to take a sweet from the bag at random.

(a) What is the **probability** that Fred will get a **black** sweet?

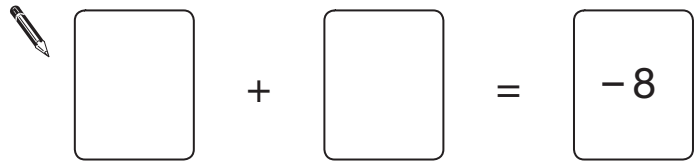
1 mark

(b) Write the missing **colour** in the sentence below.

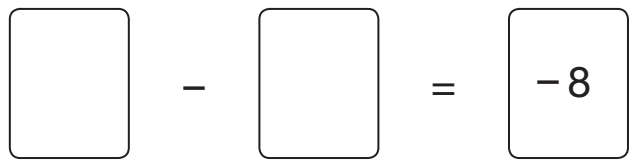
The probability that Fred will get a _____ sweet is $\frac{1}{4}$

1 mark

19. Write a number in each box to make the calculations correct.



1 mark



1 mark

20. A rectangle has an **area** of **24 cm^2**

How long could the sides of the rectangle be?

Give three **different** examples.

_____ cm and _____ cm

_____ cm and _____ cm

_____ cm and _____ cm

2 marks

21. (a) Write the missing numbers.

50% of 80 = _____

5% of 80 = _____

1% of 80 = _____

2 marks

(b) Work out 56% of 80

You can use part (a) to help you.

_____

1 mark

22. Look at this equation.

$$y = 2x + 10$$

(a) When $x = 4$, what is the value of y?

1 mark

(b) When $x = -4$, what is the value of y?

1 mark

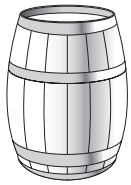
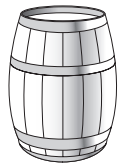
(c) Which equation below gives the **same** value of y for both $x = 4$ and $x = -4$?

Put a ring round the correct equation.

$y = 2x$ $\quad$ $y = 2 + x$ $\quad$ $y = x^2$ $\quad$ $y = \frac{x}{2}$

1 mark

23. The diagram shows four different sized barrels.

			
Barrel **A** holds **54 gallons**	Barrel **B** holds **36 gallons**	Barrel **C** holds **18 gallons**	Barrel **D** holds **9 gallons**

Write the missing fractions **as simply as possible**.

The first one is done for you.

Barrel **C** holds $\frac{1}{2}$ of the amount barrel **B** holds.

Barrel **D** holds _____ of the amount barrel **B** holds.

Barrel **C** holds _____ of the amount barrel **A** holds.

Barrel **B** holds _____ of the amount barrel **A** holds.

2 marks

END OF TEST

QCA/06/2779 (Pupil pack)
QCA/06/2778 (Mark scheme pack)
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