National curriculum tests

Key Stage 2

Mathematics

Reasoning

First name	
Last name	

SATS BOOT CAMP

Instructions

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

Questions and answers

You have **40 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 a question, **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 number of marks available for each question.

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1. Write the missing numbers to make this **multiplication** grid correct.

X	□	□
6	36	60
□	54	90

1 mark

2. Calculate 0.25 x 800.

1 mark

3. Circle the amount of money that is the **biggest**.

517p   £5.70   577p   507p   £5.07

1 mark

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4. Julia spends ¾ hour cleaning the kitchen and ½ hour cleaning the bathroom.

Altogether, how long does Julia clean for?

minutes

5. Write the missing number.

$$365 \div 12 = 30 \text{ remainder } \boxed{}$$

6. Write these numbers in order of size, starting with the **smallest**.

0.53   2.1   1.809   1.8

smallest

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7. What is 428 minutes in hours and minutes?

hours		minutes

8. Aisha swims the same number of laps every night after school and records the time she gets into the pool and the time she gets out.

The table below shows her record for five days.

Circle the time she got into the pool on the day she swam the **fastest**.

Time gets into the pool	Time gets out of the pool
16:10	16:42
16:05	16:39
16:11	16:47
15:57	16:26
15:59	16:27

9. Draw a line to match each decimal to its equivalent percentage.

0.35 ●	● 25.5%
0.8 ●	● 25%
0.25 ●	● 35%
0.255 ●	● 80%

1 mark

10. Circle the shapes which have at least one face that is a square.

cuboid   sphere   cone   cube
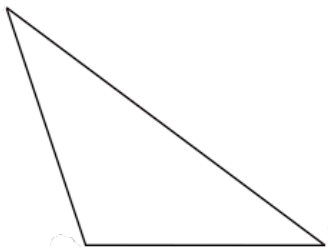
1 mark

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11. Round **72,297**

to the nearest 10

to the nearest 100

to the nearest 1,000

12. Here is a triangle.

Tick the type of triangle that best describes it.

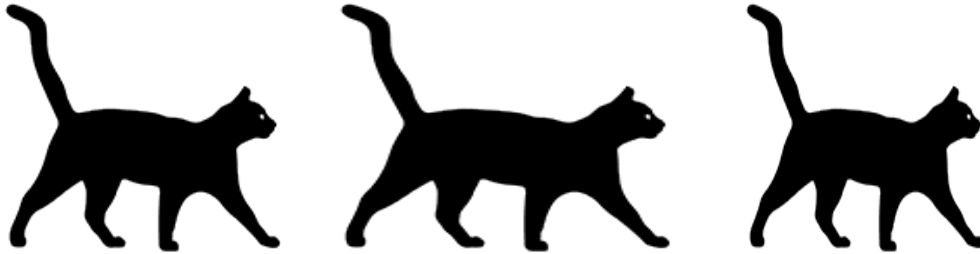Scalene triangle ☐

Isosceles triangle ☐

Right-angled triangle ☐

Obtuse triangle ☐

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13. This table shows the length of three cats (not including their tails).

Cat	length in cm
Cat 1	45.1
Cat 2	46.8
Cat 3	44.9

How much **shorter** is Cat 1 than the **combined length** of the other two cats?

cm

1 mark

14. $\frac{2}{3}$ of the children at a school have school dinners.

There are 183 children at the school altogether.

How many children at the school do **not** eat school dinners?

2 marks

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15. Here is a number written in Roman numerals.
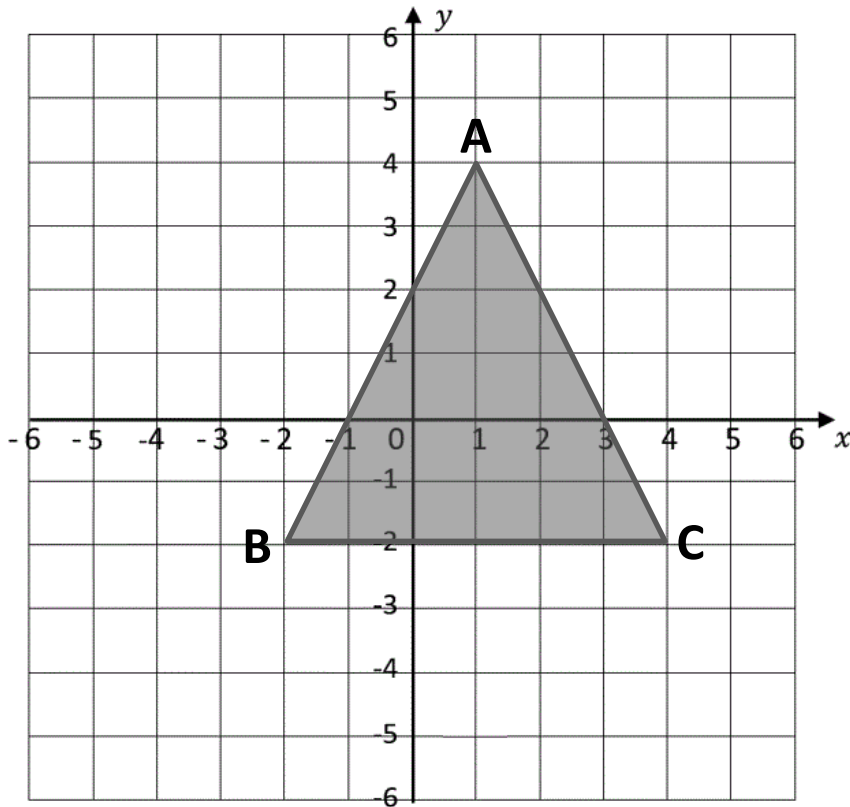
LIV

Write the number in figures.

16. Write the three missing digits to make this **addition** correct.

$$
\begin{array}{ccc}
 & 5 & 9 & \square \\
+ & 3 & \square & 8 \\
\hline
\square & 6 & 4 \\
\end{array}
$$

17. Look at the triangle on the coordinate grid below.

What are the coordinates of A and B?

A = (:)

B = (:)
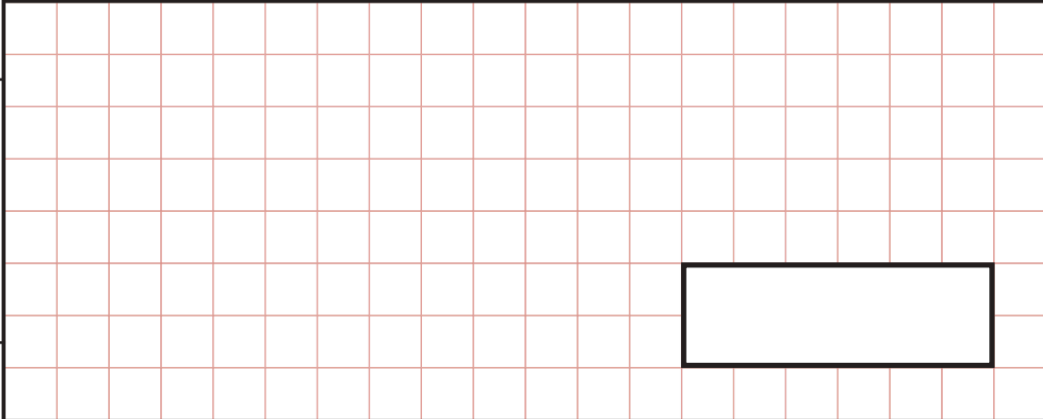
1 mark

1 mark

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18. A swimming club has 180 children who are members.

    75% of the children are under 12 and the rest are aged 13-16.

How many children are **under 12**?

Show your method

1 mark

20 new children start at the school, but the percentage of under 12s and those aged 13-16 remains the same.

What is the new number of **under 12s**?

Show your method

1 mark

19. Nile and Peter share a bowl of almonds in the ratio 5:3

If Nile gets 40 almonds, how many almonds are in the bowl altogether?

Show your method

_____
2 marks

20. Work out the following sum and put your answer in the box: $4^3 + 8^3 + 6^3 =$

_____
2 marks

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21. Adeel buys a jumper.

He also buys 3 t-shirts that cost £17.50 each.

He writes this formula to show the information, where *p* is the cost of the jumper and *q* is the cost of the t-shirts.

> What is the cost of the jumper?
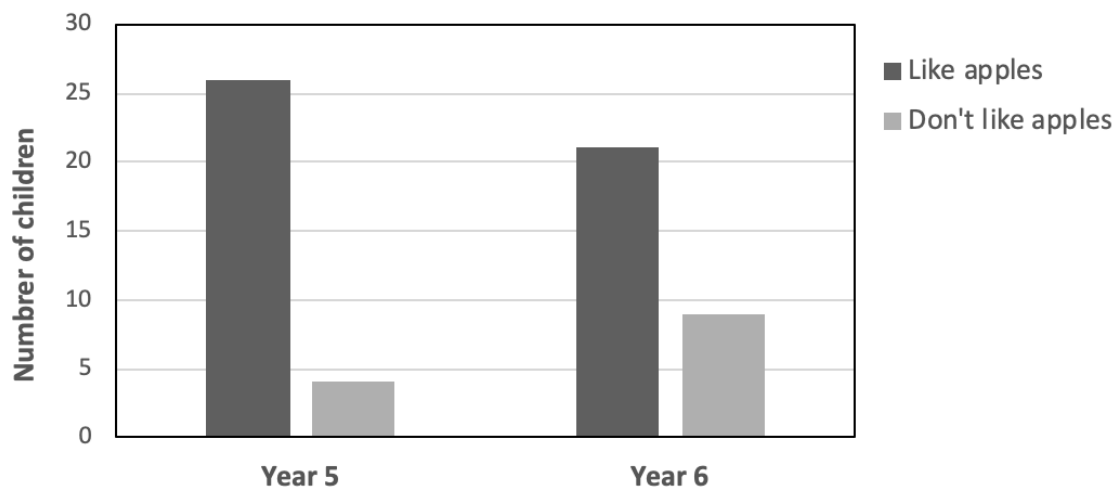
$$p + 3q = £99.60$$

Show your method

£

1 mark

> If the jumper costs £30.60, use the same formula above to work out the new cost of one t-shirt.

Show your method

1 mark

13

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22. The bar chart below shows how many children in Year 5 and Year 6 like apples.

Altogether, how many children like apples?

1 mark

How many more Year 6 children than Year 5 children **don't** like apples?

1 mark

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23. Tick the fractions that are equal to 10%.

$\frac{1}{15}$ ☐

$\frac{1}{10}$ ☐

$\frac{3}{30}$ ☐

$\frac{1}{100}$ ☐

$\frac{20}{100}$ ☐

1 mark

24. Here is a pattern of number pairs.

p	n
5	21
10	41
15	61
20	81

Complete the rule for the number pattern.

$$n = \boxed{} \times p + \boxed{}$$
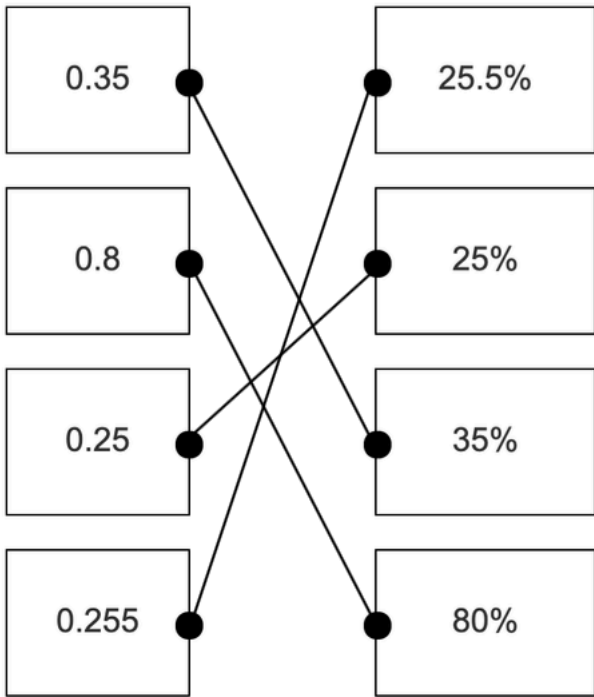
2 marks

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Answers

Qu.	Requirement	Mark
1	Award **ONE** mark for the table completed as follows: 	X	6	10
---	---	----
6	36	60
9	54	90		1m
2	200	1m
3	Award **ONE** mark for the correctly circled amount: 517p £5.70 (577p) 507p £5.07	1m
4	75	1m
5	5	1m
6	Award **ONE** mark for the boxes completed as follows: 0.53 1.8 1.809 2.1	1m
7	7 hours 8 minutes	1m

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Qu.	Requirement	Mark
8	Award **TWO** marks for the correctly circled amount: <table><tr><th>Time gets into the pool</th><th>Time gets out of the pool</th></tr><tr><td>16:10</td><td>16:42</td></tr><tr><td>16:05</td><td>16:39</td></tr><tr><td>16:11</td><td>16:47</td></tr><tr><td>15:57</td><td>16:26</td></tr><tr><td>(15:59)</td><td>16:27</td></tr></table>	Up to 2m
9	Award **ONE** mark for the lines drawn correctly: 0.35 — 25.5% 0.8 — 25% 0.25 — 35% 0.255 — 80%	1m
10	Award **ONE** mark for both answers circled: (cuboid) sphere cone (cube)	1m

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Qu.	Requirement	Mark
11	Award **TWO** marks for all answers correct, or **ONE** mark for 2 correct answers. to the nearest 10 72,300 to the nearest 100 72,300 to the nearest 1,000 72,000	Up to 2m
12	Award **ONE** mark for the correct triangle ticked: Scalene triangle ☐ Isosceles triangle ☐ Right-angled triangle ☐ Obtuse triangle ☑	1m
13	46.6	1m
14	Award **TWO** marks for the correct answer of 61. If the answer is incorrect, award **ONE** mark for evidence of an appropriate method.	Up to 2m
15	54	1m

16	Award **TWO** marks for 3 correct numbers:
	
	   5 9 **6**
	+ 3 **6** 8
	—————
	  9 6 4
	
	Award **ONE** mark for any two numbers completed correctly.
		Up to 2m

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Qu.	Requirement	Mark
17	Award **TWO** marks for both A and B correct, or **ONE** mark for either one correct. A = (1 , 4) B = (-2 , -2)	**Up to 2m**
18	Part A). 135 Part B). 150	**Up to 2m**
19	64	**Up to 2m**
20	Award **TWO** marks for the correct answer of 792. If the answer is incorrect, award **ONE** mark for evidence of an appropriate method.	**Up to 2m**
21	Part A). £47.10 Part B). £23	**Up to 2m**
22	Part A). 47 Part B). 5	**Up to 2m**
23	Award **ONE** mark for both correct answers ticked: $\frac{1}{15}$ ☐ $\frac{1}{10}$ ☑ $\frac{3}{30}$ ☑ $\frac{1}{100}$ ☐ $\frac{20}{100}$ ☐	**1m**
24	Award **TWO** marks for both answers correct and **ONE** mark for one answer correct. $n =$ 4 $\times p +$ 1	**Up to 2m**