5 for 5

Holiday Challenge: Mathematics
'5 Challenges for 5 Days' - ANSWERS

Set A

This booklet is designed to keep your brains 'ticking over' during the termly break. Just a few short activities will mean that you return ready to learn and raring to go!

Try to really impress your teacher by completing one challenge for each day of the week off.

Circle any questions that you'd like some more help with when term starts again.

Day 1

Arithmetic Questions

1 _____ = 407,035 + 5,000

412,035

1 mark

2 4 - 12 = _____

-8

1 mark

3 23 x 45 = _____

1,035

1 mark

4 560 ÷ 7 = _____

80

1 mark

5 364 x 9 = _____

3,276

1 mark

Day 1
Reasoning Questions

1

Fill in the missing digits in this calculation.

$$\begin{array}{r} 2\,\boxed{4}\,6 \\ \times \quad\;\; 3 \\ \hline \boxed{7}\,3\,\boxed{8} \end{array}$$

1 mark

2

Here is a number sentence:

35 + ☐ < 71

Circle all the numbers below that make the number sentence correct.

60 (12) (30) 39 71

1 mark

3

Emily chose a number.

She halved the number then added ten to the result. Her answer was thirty-five. What was the number she started with?

50

1 mark

4

Complete the table below by rounding each number, following the rule given.

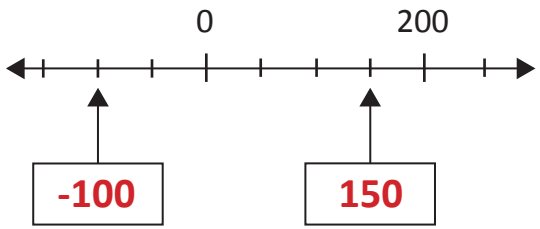
Starting Number	Rounded to the nearest 10.	Rounded to the nearest 1,000.	Rounded to the nearest 100,000.
345,281	**345,280**	**345,000**	**300,000**
100,759	**100,760**	**101,000**	**100,000**
679,099	**679,100**	**679,000**	**700,000**
350,123	**350,120**	**350,000**	**400,000**

2 marks

5

Here is part of a number line.

Write the missing numbers in the boxes.

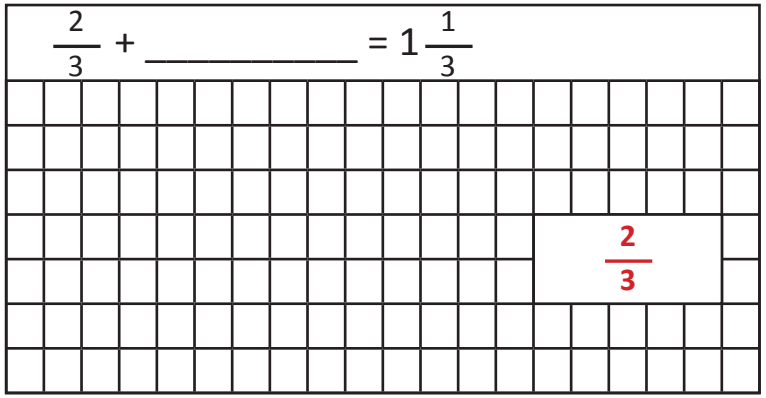


1 mark

Day 2

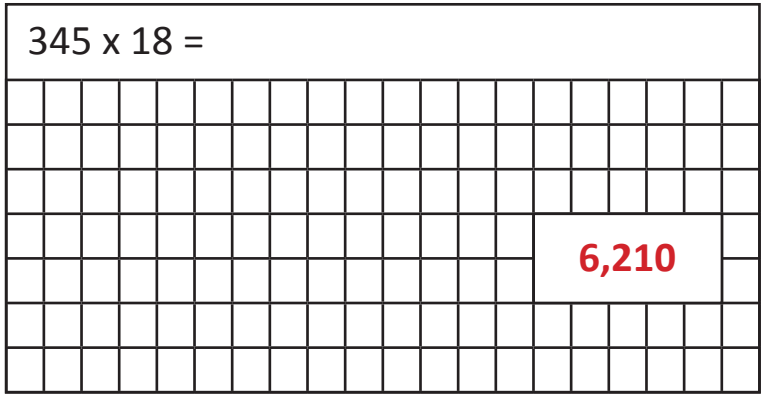
Arithmetic Questions

1 $\frac{2}{3} + \_\_\_\_\_ = 1\frac{1}{3}$



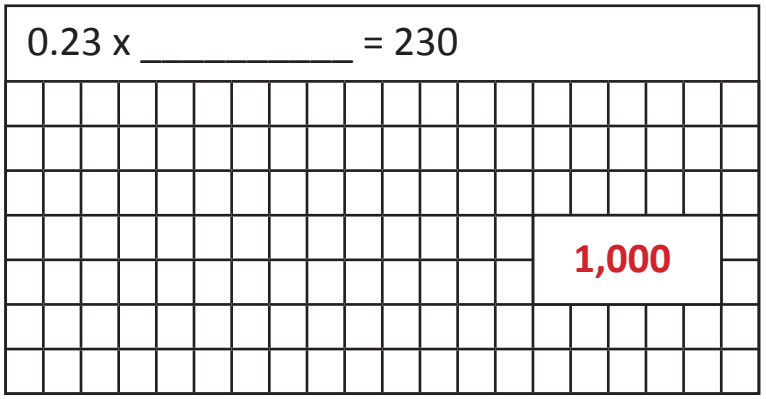
1 mark

2 345 x 18 =



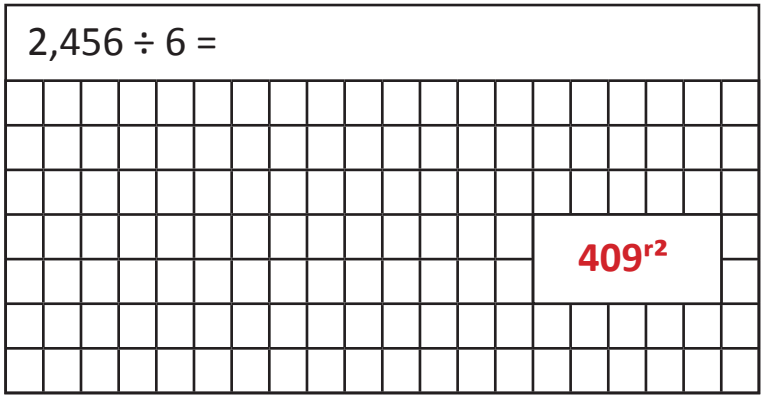
1 mark

3 0.23 x _____ = 230



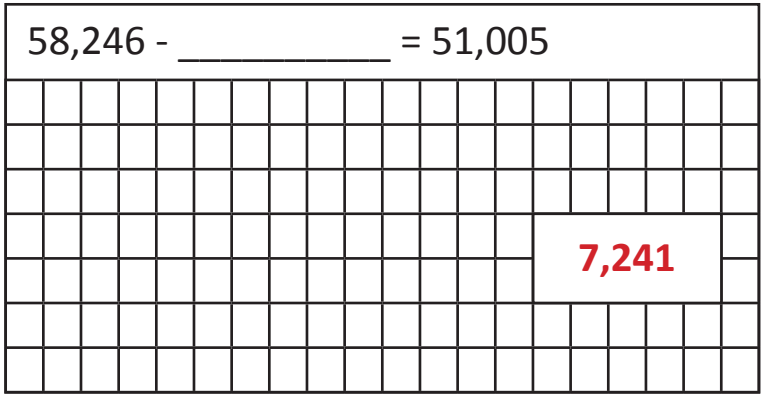
1 mark

4 2,456 ÷ 6 =



1 mark

5 58,246 - _____ = 51,005



1 mark

Day 2
Reasoning Questions

1

The table below shows the highest and lowest temperatures recorded in different cities around the world.

City	Day time temperature °C	Night time temperature °C
London	21	14
Paris	11	-4
Madrid	27	2
New York	38	-12

a. Which city has the greatest difference between the day temperature and night temperature?

New York

1 mark

b. What is the difference between the night temperatures in Paris and Madrid?

6 degrees

1 mark

2

In the supermarket storeroom, there are:
7 boxes of tomato soup
5 boxes of pea soup
4 boxes of chicken soup
There are 24 tins in every box.

How many tins of soup are there altogether?

384

1 mark

3

22 **5** 3 ÷ 7 = 321r6

What digit goes in the missing box? Prove it.

1 mark

4

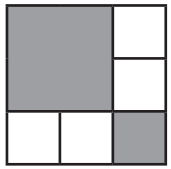
Circle the number that is 100 times greater than 406.

460 406 4,600 **40,600** 4,060 46,000

1 mark

5

The diagram is made of squares.
What fraction of the diagram is shaded?



$\frac{5}{9}$

1 mark

Day 3

Arithmetic Questions

1 _____ ÷ 10 = 45.08

450.8

1 mark

2 $34 + 5^2 = 7 \times 9 -$ _____

4

1 mark

3 $\frac{4}{5} - \frac{2}{10} =$ _____

$\frac{6}{10} = \frac{3}{5}$

1 mark

4 7,749 ÷ 13 =

596^{r1}

1 mark

5 8,576 x 5 = _____

42,880

1 mark

Day 3
Reasoning Questions

1

Here are three supermarket bills.

a. Tom rounds each bill to the nearest £10 and adds them up. What is the total amount that Tom makes?

£200

1 mark

b. Mary adds up the three bills exactly. What is the difference between her and Tom's total?

£0.37

1 mark

2

Is it always, sometimes or never true that a square number has an even number of factors? Circle the correct answer.

Always Sometimes (Never)

Explain.

A square number always has an odd number of factors as the square root is multiplied by itself. This gives one additional factor to the other factor pairs, making it an odd number.

1 mark

3

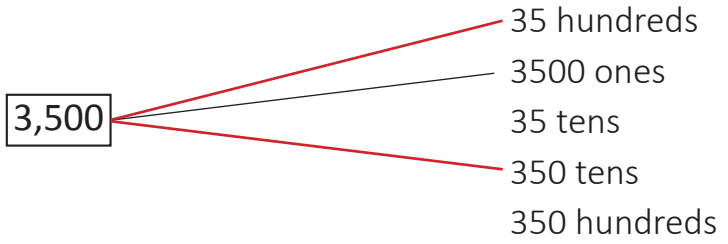
Write the missing numbers to make the multiplication grid correct.

x	**7**	0.2	**3**
30	210	**6**	90
6	42	**1.2**	**18**

1 mark

4

Draw two more lines to match 3,500 to numbers with the same value



1 mark

5

Circle all the numbers that are factors of 120.

18 32 (15) 16 (6)

1 mark

Day 4

Arithmetic Questions

1 $5 \times 8 \times 3 =$

120

1 mark

2 $\frac{2}{3} - \frac{1}{4} =$ _____

$\frac{5}{12}$

1 mark

3 _____ $= 3^2 + 6^2$

45

1 mark

4 $-9 + 6 =$ _____

-3

1 mark

5 $564 \times 29 =$ _____

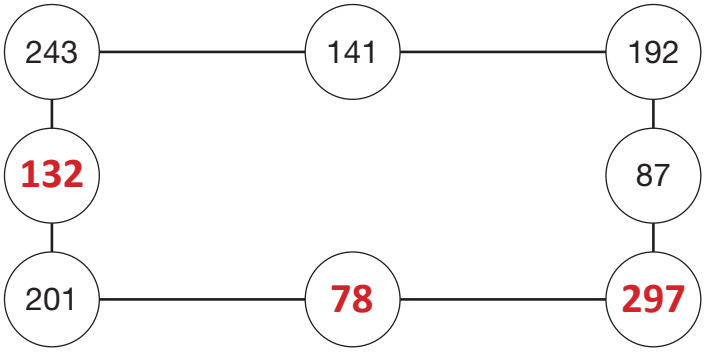
16,356

1 mark

Day 4
Reasoning Questions

1

Each side of the square has a total of 576. Write in the missing values in the circles below.



2 marks

2

The numbers in this sequence increase by 3 each time.

2, 5, 8, 11, 14

The sequence continues in the same way. Will the number 333 be in the sequence?

Circle Yes or (No) Explain how you know.

Because the numbers in the sequence are all 1 less than a multiple of 3. As 333 is a multiple of 3, it will never be in the sequence.

1 mark

3

Mr Smith is looking at the prices of 5 mansions. He wants to look at mansions costing between £885,000 and £1,150,000. Write the letters of the mansions he looks at.

A	B	C	D	E	F
					
£885,100	£1,602,000	£1,108,000	£897,990	£1,510,000	£1,015,000

A, C, D and F

1 mark

4

The perimeter of a rectangular garden is between 40 and 50 metres. What could the dimensions of the garden be?

12m by 13m **or any other possible combination**

1 mark

5

A bar of chocolate has 24 pieces. Alan eats 3 pieces, Emily eats 8 pieces and Tony eats 9 pieces. What fraction of the chocolate bar is left? Write the answer in its simplest form.

$\frac{1}{6}$

1 mark

Day 5

Arithmetic Questions

1 8,574 ÷ 14 = _____

612 r6

1 mark

2 $\frac{2}{5}$ x 3 = _____

$1\frac{1}{5}$

1 mark

3 _____ ÷ 1,000 = 0.03

30

1 mark

4 $\frac{3}{5}$ of 900 = _____

540

1 mark

5 8,576 x 23 = _____

197,248

1 mark

Day 5
Reasoning Questions

1

Joshua was given £24 birthday money. He spent $\frac{2}{8}$ on Monday.

How much money did he have left?

£18

1 mark

2

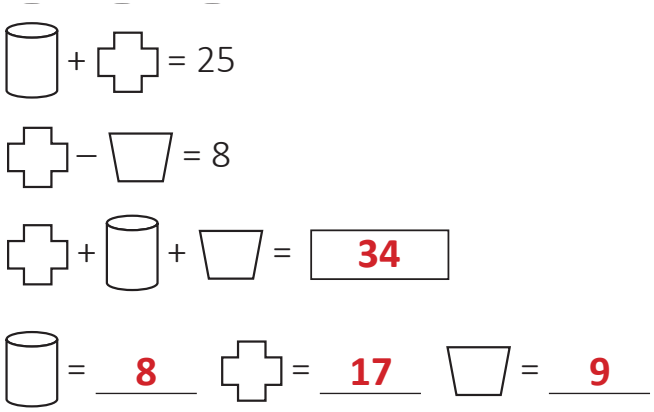
A school hall needs to lay out 1,418 chairs. If the caretaker organises them 22 chairs per row, how many complete rows will he need to lay out?

65

1 mark

3

Find the values of the three different shapes in the puzzle below.

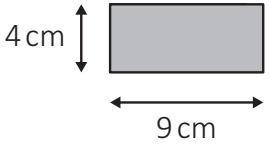


1 mark

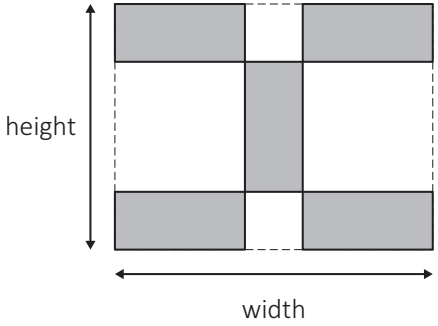
4

Kim has some rectangular tiles.

Each one is 4 centimetres by 9 centimetres.



She makes a design with them.



`Calculate the width and height of her design.

W = **22cm** H = **17cm**

1 mark

5

I think of a number. I subtract 25 and add 2.

I then multiply by 2. My answer is 154, what was my number?

100

1 mark