

## Year 5 Maths

### Arithmetic 1 Questions

1

$$37 \times 0 =$$

1 mark

2

$$467 + 234 =$$

1 mark

3

$$\frac{13}{9} - \frac{5}{9} =$$

1 mark

## Year 5 Maths

4

$$51,750 - 1,000 - 1,000 =$$

1 mark

5

$$8 \times 6 =$$

1 mark

6

$$630,000 - 410,000 =$$

1 mark

## Year 5 Maths

7

$$4 \times 110 =$$


1 mark

8

$$27,047 + 39,428 =$$


1 mark

9

$$9 \times 12 =$$


1 mark

## Year 5 Maths

10

$$54 \div 6 =$$

1 mark

11

$$457 \times 3 =$$

1 mark

12

$$9,400 - 8 =$$

1 mark

Year 5 Maths

13

$$132 \div 12 =$$

1 mark

14

$$36,853 + 7,255 =$$

1 mark

15

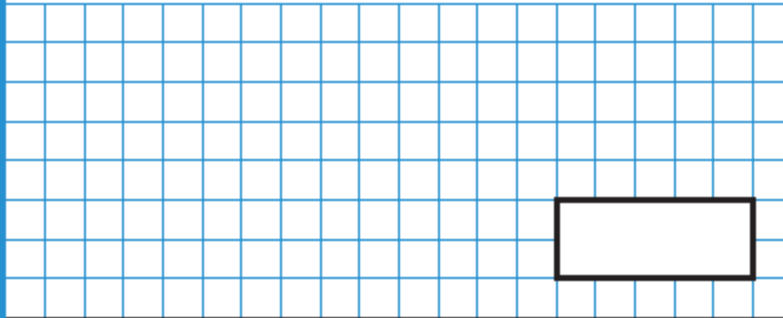
$$\frac{1}{7} \times 5 =$$

1 mark

Year 5 Maths

16

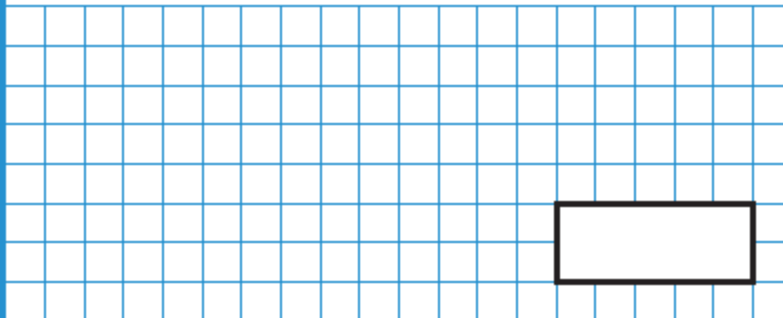
$$804 - 379 =$$

☐

1 mark

17

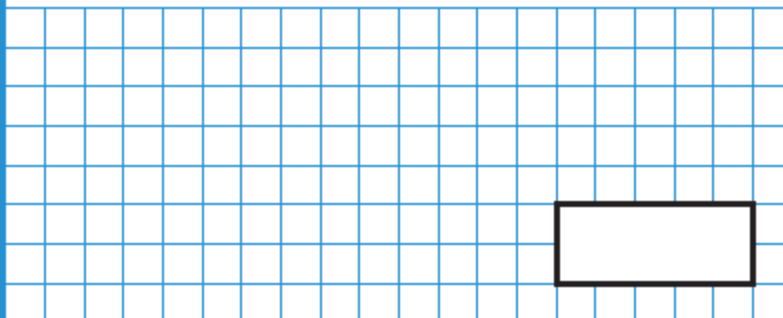
$$834 \div 3 =$$

☐

1 mark

18

$$480 \div 4 =$$

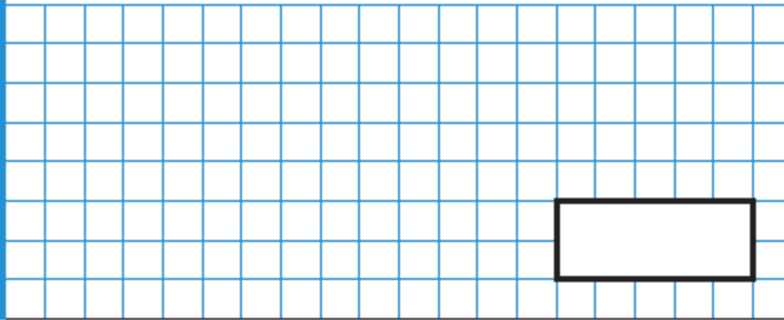
☐

1 mark

Year 5 Maths

19

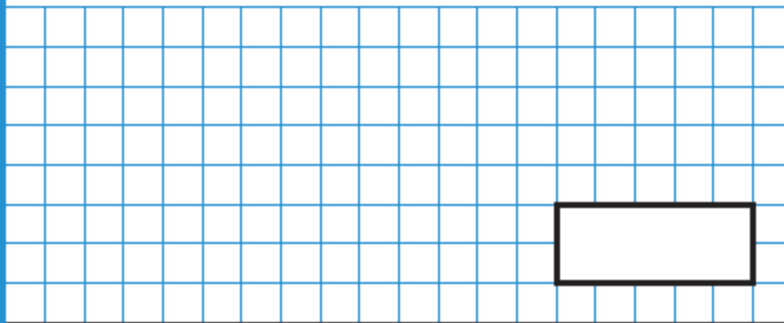
$$1,253 \times 7 =$$

☐

1 mark

20

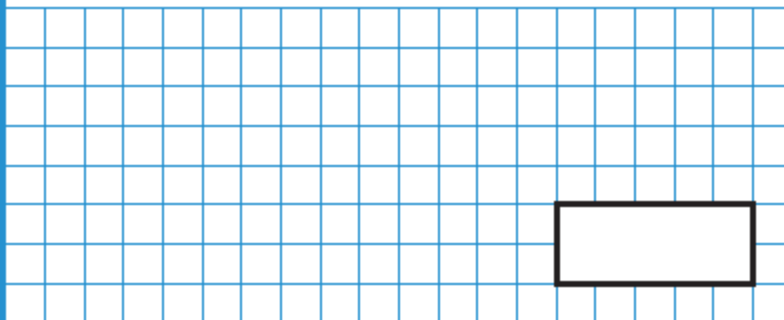
$$3,705 \div 5 =$$

☐

1 mark

21

$$2.804 + 4.327 =$$

☐

1 mark

Year 5 Maths

22

$$7,200 \div 80 =$$

☐

1 mark

23

$$37,000 + 46,000 =$$

☐

1 mark

24

$$\frac{5}{7} \times 8 =$$

☐

1 mark



## Year 5 Maths

25

$$90,450 - 38,865 =$$

☐

1 mark

26

$$700,000 - 700 =$$

☐

1 mark

27

$$\begin{array}{r} 51 \\ \times 47 \\ \hline \end{array}$$

Show  
your  
method

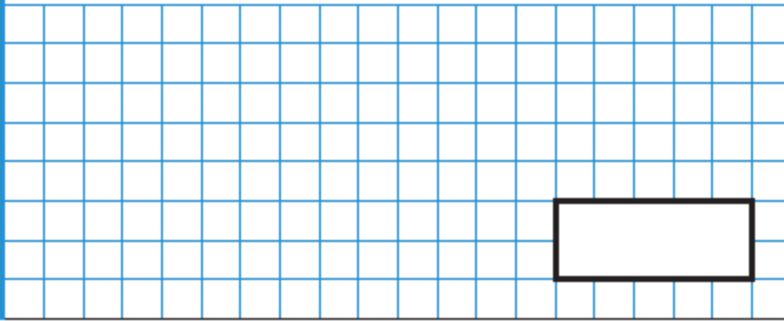
☐

2 marks

Year 5 Maths

28

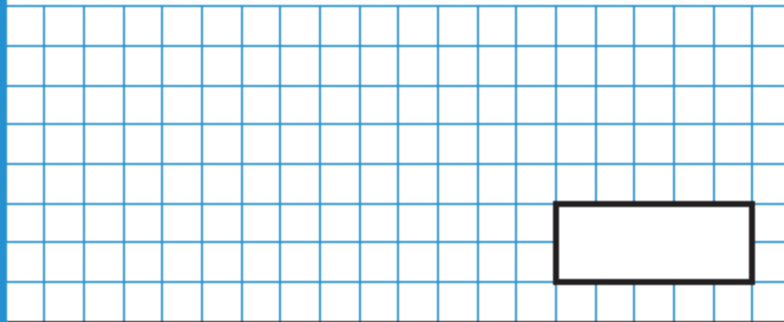
$$99,999 + 100 =$$

☐

1 mark

29

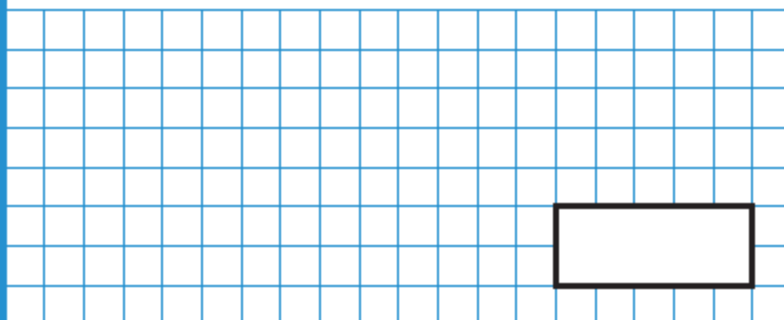
$$222,568 - 46,084 =$$

☐

1 mark

30

$$31.83 \times 6 =$$

☐

1 mark

Year 5 Maths

31

$$2\frac{1}{5} \times 2 =$$

1 mark

32

$$6^2 - 2^3 =$$

1 mark

33

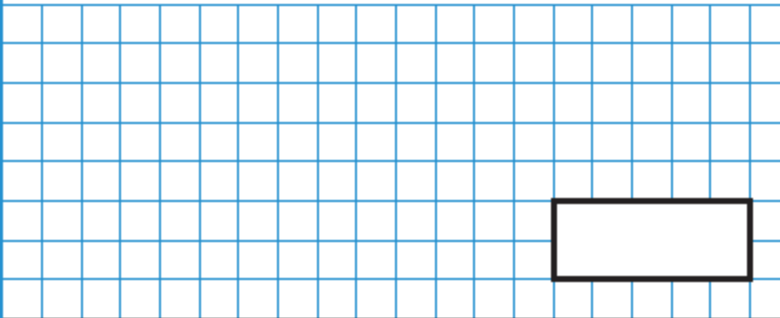
$$\frac{3}{10} + \frac{2}{5} =$$

1 mark

Year 5 Maths

34

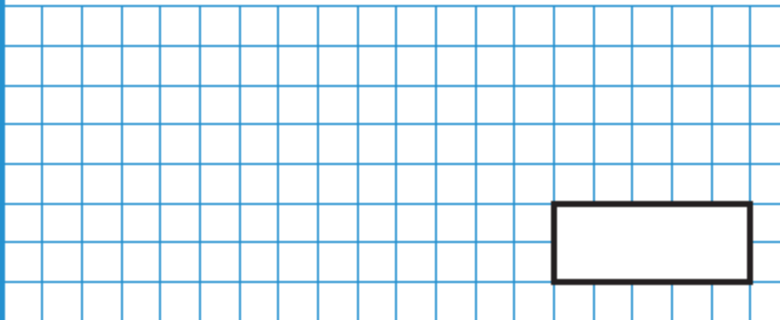
$$23.8 \div 7 =$$

☐

1 mark

35

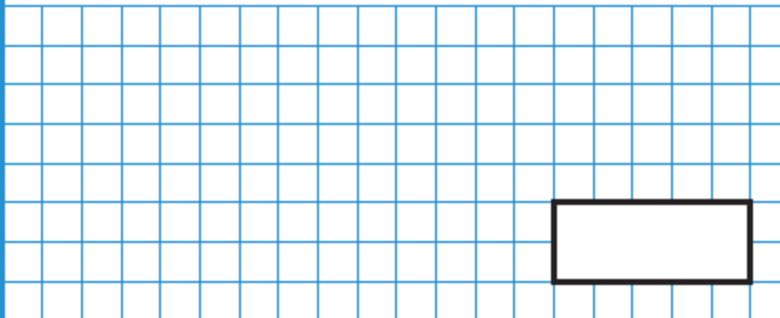
$$1\frac{2}{7} \times 5 =$$

☐

1 mark

36

$$\frac{2}{3} - \frac{5}{12} =$$

☐

1 mark

## Year 5 Maths

37

$$\begin{array}{r} 1834 \\ \times \quad 29 \\ \hline \end{array}$$

Show  
your  
method

2 marks

38

$$35.48 - 3.682 =$$

1 mark

## Year 5 Maths

### Arithmetic 1 Answers

Question number	Answer	Marks	NC Test framework reference
1	0	1	4C6b
2	701	1	4C2
3	$\frac{8}{9}$ or equivalent	1	5F4
4	49,750	1	5N1
5	48	1	5C6a
6	220,000	1	5C1
7	440	1	5C6a
8	66,475	1	5C2
9	108	1	5C6a
10	9	1	5C6a
11	1,371	1	5C7a
12	9,392	1	5C1
13	11	1	5C6a
14	44,108	1	5C2
15	$\frac{5}{7}$ or equivalent	1	5F5
16	425	1	4C2
17	278	1	5C7b
18	120	1	5C6a
19	8,771	1	5C7a
20	741	1	5C7b

## Year 5 Maths

Question number	Answer	Marks	NC Test framework reference
21	7.131	1	5F10
22	90	1	5C6a
23	83,000	1	5C1
24	$5\frac{5}{7}$ or equivalent e.g. $\frac{40}{7}$ Do not accept unconventional mixed numbers e.g. $4\frac{12}{7}$	1	5F5
25	51,585	1	5C2
26	699,300	1	5C1
27	<p><b>For 2 marks</b></p> <ul style="list-style-type: none"> <li>2,397</li> </ul> <p><b>For 1 mark</b></p> <ul style="list-style-type: none"> <li> <math display="block">\begin{array}{r} 51 \\ \times 47 \\ \hline 2040 \\ 357 \\ \hline 2397 \end{array}</math> </li> </ul> <p>An error in one row, then added correctly, or an error in the addition</p>	2	5C7a
28	100,099	1	5C1
29	176,484	1	5C2
30	190.98	1	5F10
31	$4\frac{2}{5}$ or equivalent e.g. $\frac{22}{5}$ Do not accept unconventional mixed numbers e.g. $3\frac{7}{5}$	1	5F5
32	28	1	5C5d

## Year 5 Maths

Question number	Answer	Marks	NC Test framework reference
33	$\frac{7}{10}$ or equivalent	1	5F4
34	3.4	1	5F10
35	$6\frac{3}{7}$ or equivalent e.g. $\frac{45}{7}$ Do not accept unconventional mixed numbers e.g. $5\frac{10}{7}$	1	5F5
36	$\frac{1}{4}$ or equivalent e.g. $\frac{3}{12}$	1	5F4
37	<p>For 2 marks</p> <ul style="list-style-type: none"> <li>53,186</li> </ul> <p>For 1 mark</p> <ul style="list-style-type: none"> <li> <math display="block">\begin{array}{r} 1834 \\ \times 29 \\ \hline 36680 \\ 16506 \\ \hline 53186 \end{array}</math> </li> </ul> <p>An error in one row, then added correctly, or an error in the addition</p>	2	5C7a
38	31.798	1	5F10

## Arithmetic 2 Questions



## Year 5 Maths

1

$312 + 100 =$

--	--

1 mark

2

$421 - 50 =$

--	--

1 mark

3

$91 \div 7 =$

--	--

1 mark

## Year 5 Maths

$$\frac{5}{9} + \frac{2}{9} =$$

1 mark

$$\frac{11}{15} - \frac{4}{15} =$$

1 mark

$3981 + 4062 =$

1 mark

## Year 5 Maths

7

$3266 - 829 =$

--	--

1 mark

8

$11 \times 11 =$

--	--

1 mark

9

$8 \times 3 \times 5 =$

--	--

1 mark

## Year 5 Maths

10

$528 \times 5 =$

1 mark

1 mark

11

$5.9 + 0.3 =$

A 20x10 grid with a rectangle in the bottom right corner. The rectangle is 5 units wide and 3 units high, starting from the 15th column and 7th row, extending to the 20th column and 10th row.

1 mark

1 mark

12

$29 \div 10 =$

A 20x10 grid with a rectangle in the bottom right corner. The rectangle is 5 units wide and 3 units high, starting at column 15, row 7 and ending at column 20, row 10.

1 mark

1 mark

## Year 5 Maths

13  $\frac{5}{6}$  of 90 =

--	--

1 mark

14	$62\,871 + 5289 =$
----	--------------------

--	--

1 mark

15	$60\,000 - 400 =$
----	-------------------

[illegible]

1 mark

## Year 5 Maths

16

$$55\,2896 - 71\,991 =$$

1 mark

1 mark

17

q2

A 20x10 grid with a rectangle in the bottom right corner. The rectangle is 5 units wide and 3 units high, spanning from column 15 to 20 and row 7 to 10.

1 mark

1 mark

18

$7 \times 900 =$

1 mark

1 mark

## Year 5 Maths

19

$640 \div 8 =$

--	--

1 mark

20

$$5.6 \times 100 =$$

--	--

1 mark

21

$$\frac{7}{10} + \frac{4}{5} =$$

--	--

1 mark

## Year 5 Maths

22  $\frac{2}{3} - \frac{2}{9} =$

--	--

1 mark

23	$\frac{3}{4} \times 5 =$
----	--------------------------

--	--

1 mark

24	$7.2 + 2.81 =$
----	----------------

--	--

1 mark



## Year 5 Maths

25

$409 \times 12 =$

2 marks

26

$$4823 \times 35 =$$

A blank grid with a vertical line on the left and a horizontal line at the bottom, forming a coordinate system. A small rectangle is drawn in the bottom right corner.

2 marks

## Year 5 Maths

27

$518 \div 7 =$

--	--

2 marks

28

$3876 \div 4 =$

--	--

2 marks

## Year 5 Maths

### Arithmetic Paper 2 Answers

**Guidance:** Children will have 30 minutes for this test.

question	answer	marks
1	412	1
2	371	1
3	13	1
4	$\frac{7}{9}$	1
5	$\frac{7}{15}$	1
6	8043	1
7	2437	1
8	121	1
9	120	1
10	2640	1
11	6.2	1
12	2.9	1
13	75	1
14	68 160	1
15	59 600	1
16	480 905	1
17	81	1
18	6300	1
19	80	1
20	560	1
21	$1\frac{5}{10}$ or $1\frac{1}{2}$	1

question	answer	marks
22	$\frac{4}{9}$	1
23	$3\frac{3}{4}$	1
24	10.01	1
25	4908	2
26	168 805	2
27	74	2
28	969	2
		Total 32

## Year 5 Maths

### Reasoning 1 Questions

1. Write these numbers in order, starting with the **lowest**.

10

-3

-11

4

-5

lowest

1 mark

2. Write in the missing numbers.

One has been done for you.

rounded to the nearest  
whole number is



7.02



7

3.54



6.45



1 mark

## Year 5 Maths

3. Mia can catch different buses to get to school.  
The table shows Mia's journey times from leaving home to arriving at school, for each bus.

Bus number	Leave home	Arrive at school
10	8:26	8:51
12	8:10	8:43
53	7:55	8:30
63	8:18	8:31
99	8:21	8:45

How long is Mia's journey if she catches the number 53 bus?

minutes

1 mark

4. Write what the missing numbers could be.

$$\boxed{\phantom{00}} \times \boxed{\phantom{00}} = 180$$

1 mark

## Year 5 Maths

5. Miss Smith had 150 reward stickers at the start of the year.

She gave 8 children 7 stickers each.

She gave 12 children 6 stickers each.

How many stickers are left?

Diagram illustrating the layout for showing the method and stickers:

- A large grid of blue lines is shown.
- On the left side, a vertical rectangle with rounded corners contains the text "Show your method".
- On the right side, a smaller rectangle contains the text "stickers".

2 marks

6. Mount Everest is the highest mountain in the world.

It measures **twenty-nine thousand and twenty-nine feet.**

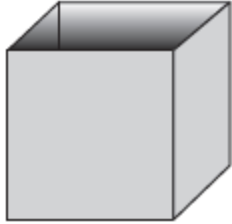
Write its height in figures.

feet

1 mark

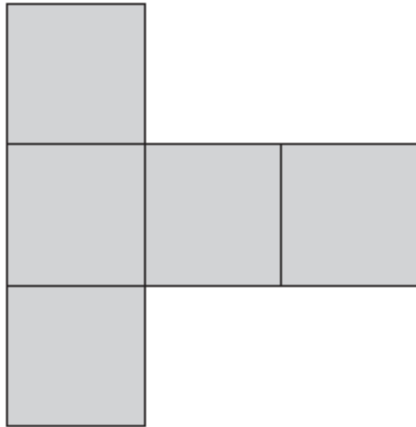
## Year 5 Maths

7. Here is an open top cube.



Here is the net from which it is made.

Put a tick (✓) on the square which is its base.

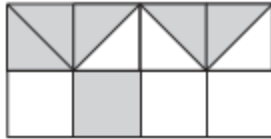


1 mark

## Year 5 Maths

8. Look at each picture.

Tick (✓) all the pictures that have exactly  $\frac{1}{2}$  shaded.



2 marks

9. A shelf holds 15 books.  
Jason has 56 books.

How many shelves does he need to hold **all** his books?

1 mark

Holly has 7 shelves **full** of books.

How many books does she have altogether?

1 mark



## Year 5 Maths

10. Circle the **two** divisions which have an answer of 4 remainder 3

$13 \div 3$

$23 \div 5$

$22 \div 6$

$31 \div 7$

1 mark

11. A juice bottle holds  $\frac{3}{4}$  litre when it is full.

How many **millilitres** is this?

Tick one.

7.5

☐

75

☐

750

☐

7,500

☐

75,000

☐

1 mark

## Year 5 Maths

12. Mia and Holly both buy 24 bags of crisps.

Mia buys 4 packs of 6 bags.



Holly buys 2 packs of 12 bags.



Holly says to Mia, *'You paid 60p more than me.'*

Is Holly correct?

Circle **Yes** or **No**.

**Yes / No**

Explain how you know.

A large, empty cloud-shaped box with a scalloped border, intended for the student to write their explanation.

1 mark

## Year 5 Maths

13. Jason lives 1.2 km from school.

Mia lives 350 m from school.

How much closer to school is Mia than Jason?

 m

1 mark

14. Tick (✓) all of the cards that show more than a half.

$$\frac{5}{8}$$

$$60\%$$

$$0.49$$

$$45\%$$

$$0.6$$

1 mark

## Year 5 Maths

15. Choose a number to complete the sentence below.

10      100      1,000      10,000      100,000

45,495 rounded to the nearest \_\_\_\_\_ equals 45,000

1 mark

16. Holly buys 3 packets of balloons.

She pays with a £5 note and gets 65p change.

How much does one packet of balloons cost?

Show your method

£

2 marks

## Year 5 Maths

17. Write the missing numbers to make these sentences correct.

$$\frac{1}{2} \text{ of } 90 \text{ kg} = \boxed{\phantom{00}} \text{ kg}$$

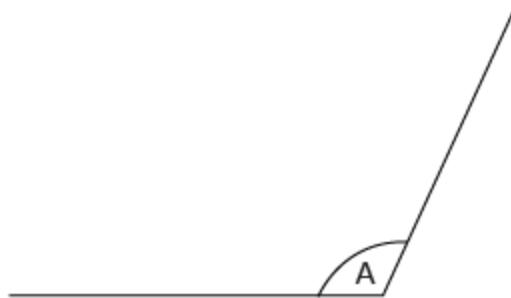
1 mark

$$\frac{1}{8} \text{ of } \boxed{\phantom{00}} \text{ kg} = 20 \text{ kg}$$

1 mark

18. Measure **angle A** accurately.

Use a protractor (angle measurer).



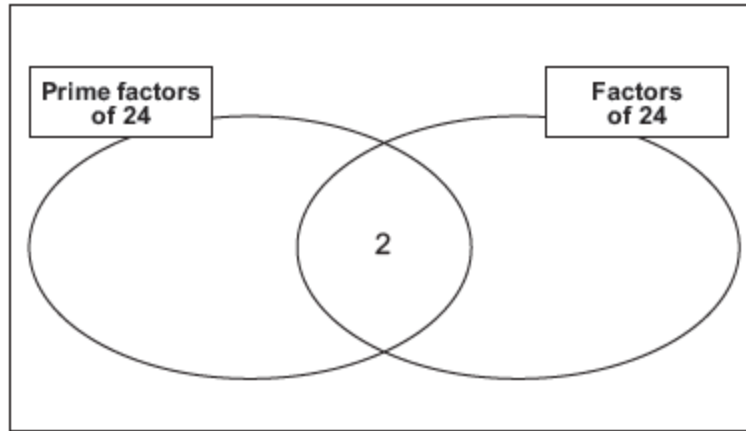
1 mark

## Year 5 Maths

19. Write the numbers in the correct places on the Venn diagram.

One has been done for you.

~~2~~      3      4      6      7



2 marks

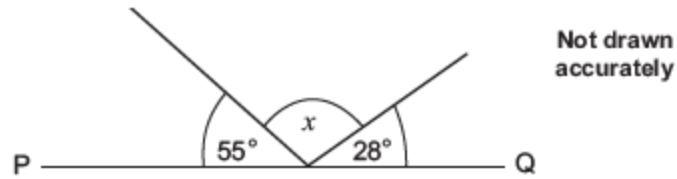
20. 6 mangoes cost £8.10

Calculate the cost of one mango.

1 mark

## Year 5 Maths

21. PQ is a straight line.



Calculate the size of angle  $x$ .

Do **not** use a protractor (angle measurer).

1 mark

22. Here are the ingredients to make pizza bases.

<u>Pizza base</u>
500g flour
25g butter
350ml water

Jason makes pizza bases using 1500 g of flour.

What weight of butter should he use?

1 mark

## Year 5 Maths

23. Mia and Jason each have some money.

Altogether they have £1.30

Mia gives Jason 20p so that they both have the same amount.

How much money did each have at the start?

Show your method

Mia had	p	Jason had	p
---------	---	-----------	---

2 marks

24. Circle the two fractions that are equivalent to 0.4

$$\frac{40}{100} \quad \frac{1}{40} \quad \frac{1}{4} \quad \frac{4}{10}$$

1 mark



## Year 5 Maths

25. Write these numbers in order, starting with the **smallest**.

$$\frac{5}{2}$$

$$\frac{13}{4}$$

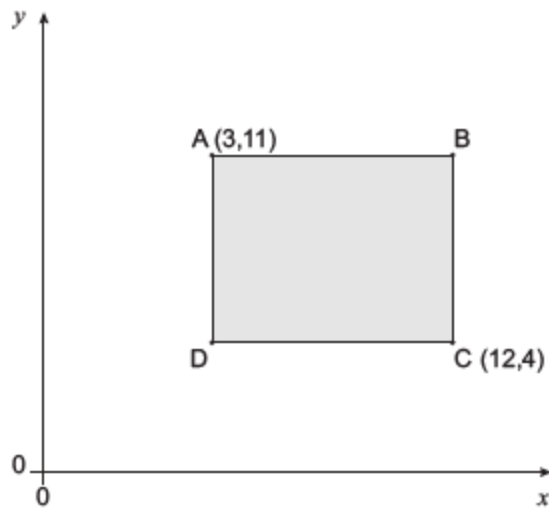
$$\frac{25}{8}$$

$$2\frac{3}{4}$$

smallest

1 mark

26. Here is a shaded rectangle.



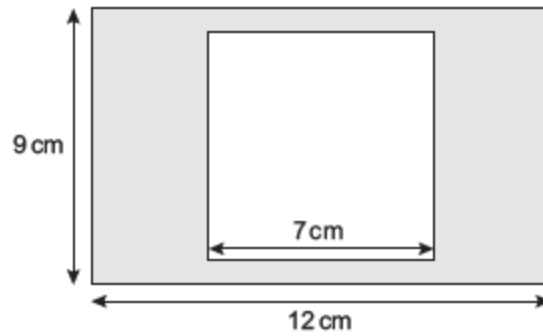
Write the coordinates for point B.

B = (       ,       )

1 mark

## Year 5 Maths

27. A square with 7cm sides is cut out of a grey rectangle.



What is the area of the grey shape that is left?

Show  
your  
method

cm<sup>2</sup>

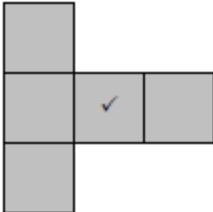
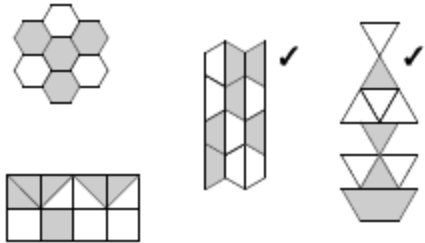
2 marks

## Year 5 Maths

### Reasoning 1 Answers

Qu.	Requirement	Mark	Additional guidance
1 5N5	Numbers in the correct order, as shown: <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px 10px;">-11</div> <div style="border: 1px solid black; padding: 2px 10px;">-5</div> <div style="border: 1px solid black; padding: 2px 10px;">-3</div> <div style="border: 1px solid black; padding: 2px 10px;">4</div> <div style="border: 1px solid black; padding: 2px 10px;">10</div> </div>	1m	All numbers must be written in the correct order for the award of the mark.
2 5F7	Both numbers correct, as shown: <div style="margin-top: 10px;">7.02 → <div style="border: 1px solid black; padding: 2px 10px; display: inline-block; min-width: 40px; text-align: center;">7</div></div> <div style="margin-top: 10px;">3.54 → <div style="border: 1px solid black; padding: 2px 10px; display: inline-block; min-width: 40px; text-align: center;">4</div></div> <div style="margin-top: 10px;">6.45 → <div style="border: 1px solid black; padding: 2px 10px; display: inline-block; min-width: 40px; text-align: center;">6</div></div>	1m	Both numbers must be correct for the award of the mark.  Do not accept decimals e.g. 4.0, 6.00
3 4M4a	35 (minutes)	1m	
4 5C5a	Two numbers with a product of 180, e.g. <div style="margin-top: 10px; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 10px; margin: 0 5px;">3</div> <div style="margin: 0 5px;">×</div> <div style="border: 1px solid black; padding: 2px 10px; margin: 0 5px;">60</div> <div style="margin: 0 5px;">=</div> <div style="margin: 0 5px;">180</div> </div>	1m	Accept fractions and decimals e.g. <div style="margin-top: 10px; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 10px; margin: 0 5px;">1.8</div> <div style="margin: 0 5px;">×</div> <div style="border: 1px solid black; padding: 2px 10px; margin: 0 5px;">100</div> <div style="margin: 0 5px;">=</div> <div style="margin: 0 5px;">180</div> </div>
5 5C4 5C8a	Award TWO marks for the correct answer of 22  If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g. <ul style="list-style-type: none"> <li><math>8 \times 7 + 12 \times 6 =</math> <math>56 + 72 = 128</math> <math>150 - 128 = 21</math> (error)</li> <li><math>150 - 56 - 72 =</math></li> </ul>	Up to 2m	Answer need not be obtained for the award of ONE mark.
6 5N2	29,029 (feet)	1m	Accept with or without a comma.

## Year 5 Maths

Qu.	Requirement	Mark	Additional guidance
7 6G3b	Tick on the correct face, as shown: 	1m	Accept alternative unambiguous indications.
8 5F2b	Award TWO marks for both pictures ticked, as shown:  If the answer is incorrect, award ONE mark for either of the correct pictures ticked and no other picture OR both of the correct pictures ticked and one other picture.	Up to 2m	Accept alternative unambiguous indications.
9a 5C8a	4	1m	
9b 5C8a	105	1m	
10 5C7b	Two divisions circled, as shown: $13 \div 3$ $23 \div 5$ $22 \div 6$ $31 \div 7$	1m	Both divisions must be indicated for the award of the mark.  Accept alternative unambiguous indications.

## Year 5 Maths

Qu.	Requirement	Mark	Additional guidance
11 5M5	<p>Correct amount ticked, as shown:</p> <div style="text-align: center;"> <input type="checkbox"/>  <input type="checkbox"/>  750    <input checked="" type="checkbox"/>  <input type="checkbox"/>  <input type="checkbox"/> </div>	1m	Accept alternative unambiguous indications.
12 5M9a	<p>An explanation that recognises that Mia paid 40p more than Holly, e.g.</p> <ul style="list-style-type: none"> <li>• 'Mia paid £6 and Holly paid £5.60 so Mia paid 40p more'</li> <li>• 'Mia paid only 40p more for 4 lots of 6 bags'</li> <li>• '£6.00 is 40p more than £5.60, not 60p'</li> <li>• 'Holly paid 40p less than Mia'.</li> </ul> <p>OR</p> <p>An explanation that recognises that Mia paid £6 and Holly paid £5.60, e.g.</p> <ul style="list-style-type: none"> <li>• 'Mia paid £6.00 and Holly paid £5.60'</li> <li>• 'Because 60p more would mean that Mia spent £6.20 but she spent £6.00'</li> <li>• '£6 is not 60p more than £5.60'.</li> </ul>	1m	<p>Award the mark if either YES is circled OR if neither 'Yes' or 'No' is circled, provided a correct unambiguous explanation is given.</p> <p>Do not award the mark for circling 'No' alone.</p> <p>Do not accept an explanation which makes comparisons between incorrect amounts of money, e.g.</p> <ul style="list-style-type: none"> <li>• 'Mia's only cost her £5 and Holly's cost her £5.60'</li> <li>• 'Because <math>2 \times £2.80 = £4.60</math> and <math>4 \times £1.50 = £6</math> and £6 is 140p more than £4.60 not 50p more than £4.60'.</li> </ul> <p>Do not accept an explanation which is vague or ambiguous or merely restates the question, e.g.</p> <ul style="list-style-type: none"> <li>• 'I know that Holly must be wrong because Holly's costs a lot less than 60p'</li> <li>• 'I know Holly paid 60p more'.</li> </ul>
13 5M5	850 (m)	1m	

## Year 5 Maths

Qu.	Requirement	Mark	Additional guidance
14 5F12 5F11	Three cards ticked as shown: <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"><math>\frac{5}{8}</math> ✓</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">60% ✓</div> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">0.49</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">45%</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">0.6 ✓</div> </div>	1m	All three cards (and no others) must be indicated for the award of the mark.  Accept alternative unambiguous indications.
15 5N4	1,000	1m	
16 5M9a	Award TWO marks for the correct answer of £1.45  If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g. <ul style="list-style-type: none"> <li>£5 – 65p = £4.35</li> <li>£4.35 ÷ 3 =</li> </ul>	Up to 2m	Accept £1.45p for TWO marks.  Accept for ONE mark £145 or £145p as evidence of an appropriate method.  Answer need not be obtained for the award of ONE mark.
17a 4F10b	$\frac{1}{2}$ of 90kg = <div style="border: 1px solid black; padding: 2px 10px;">45kg</div>	1m	
17b 4F10b	$\frac{1}{8}$ of <div style="border: 1px solid black; padding: 2px 10px;">160kg</div> = 20kg	1m	
18 5G4c	115°	1m	Accept an answer in the range 113° – 117° inclusive.
19 5C5a 5C5c	Award TWO marks for four correctly placed numbers, as shown: <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">Prime factors of 24</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Factors of 24</div> </div> <div style="text-align: center; margin-top: 10px;"> </div> </div> If the answer is incorrect, award ONE mark for any three numbers correctly placed.	Up to 2m	Do not credit any number that has been placed in more than one region.

## Year 5 Maths

Qu.	Requirement	Mark	Additional guidance
20 5M9a	£1.35	1m	
21 5G4b	97°	1m	
22 6R1	75 (g)	1m	
23 5C4	<p>Award TWO marks for the correct answer of Mia had 85p and Jason had 45p</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none"> <li>• £1.30 ÷ 2 = 75p (error) 75p + 20p = 95p; 75p – 20p = 55p</li> <li>• £1.30 – 40p = 90p 90p ÷ 2 =</li> </ul> <p>OR</p> <p>One correct i.e. either Mia had 85p or Jason had 45p</p> <p>OR</p> <p>Both correct amounts but in the wrong order i.e. Mia had 45p and Jason had 85p.</p>	Up to 2m	Answer need not be obtained for the award of ONE mark.
24 5F6a	<p>Two fractions circled, as shown:</p> $\left(\frac{40}{100}\right) \quad \frac{1}{40} \quad \frac{1}{4} \quad \left(\frac{4}{10}\right)$	1m	<p>Both fractions must be indicated for the award of the mark.</p> <p>Accept alternative unambiguous indications.</p>
25 5F2a	<p>Fractions ordered correctly, as shown:</p> $\frac{5}{2} \quad 2\frac{3}{4} \quad \frac{25}{8} \quad \frac{13}{4}$	1m	<p>All numbers must be written in the correct order for the award of the mark.</p> <p>Accept equivalent fractions, e.g.</p> $2\frac{1}{2} \quad 2\frac{3}{4} \quad 3\frac{1}{8} \quad 3\frac{1}{4}$ <p>or</p> $\frac{20}{8} \quad \frac{22}{8} \quad \frac{25}{8} \quad \frac{26}{8}$
26 4P3b	(12, 11)	1m	Do not accept (11, 12)

## Year 5 Maths

Qu.	Requirement	Mark	Additional guidance
27 5M7b	<p>Award TWO marks for the correct answer of 59 (cm<sup>2</sup>)</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none"><li>• <math>12 \times 9 - 7 \times 7 =</math></li><li>• <math>7 \times 7 = 49</math> <math>12 \times 9 = 108</math> <math>108 - 49 =</math></li></ul>	Up to 2m	Answer need not be obtained for the award of ONE mark.



# Year 5 Maths

## Decimals Questions

### Adding Decimals Within 1

1a. What number do these counters represent?



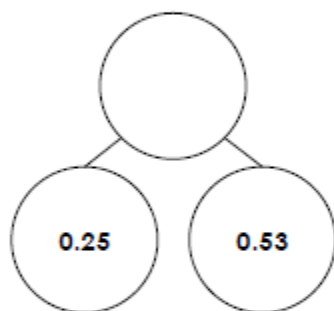
Add one more tenth.

If you then add another 0.07, what number would you have?



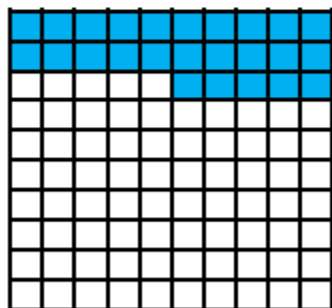
VF

2a. Complete the part whole model.



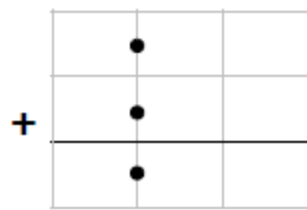
VF

3a. Use the square to add 2 hundredths. What is your answer?



VF

4a. True or false?  $0.52 + 0.02 = 7.24$



VF

### Adding Decimals Within 1

1a. Check what Joanne has said. Is she correct? Explain your answer.

When I add 0.1 to 0.09, my answer is 0.91.



PS

2a. Geoff has taken a test. Mark his answers and write any corrections.

	corrections
$0.83 + 0.01 = 0.09$	
$0.62 + 0.26 = 8.8$	
$0.34 + 0.62 = 0.96$	
$0.53 + 0.04 = 0.93$	
$0.84 + 0.05 = 0.09$	



PS

3a. Which digits from 5 to 9 could you put in the empty spaces to make this statement correct?

$$0.63 + 0.2 \square = 0.8 \square$$

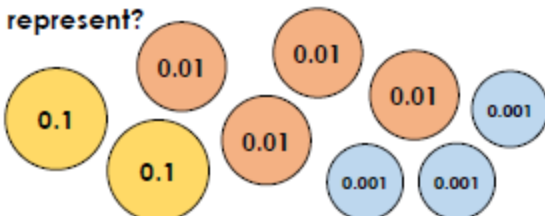


PS

## Year 5 Maths

### Adding Decimals Within 1

5a. What number do these counters represent?



Add one hundredth more.

If you then add another 0.004, what number would you have?



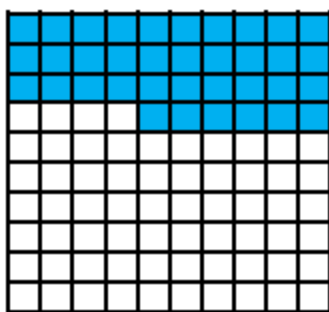
VF

6a. Complete the part whole model.



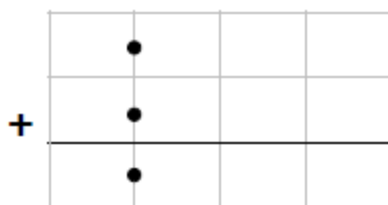
VF

7a. Use the square to add 4 tenths and 5 hundredths. What is your answer?



VF

8a. True or false?  $0.906 + 0.025 = 0.931$



VF

### Adding Decimals Within 1

4a. Check what Henri has said. Is he correct? Explain your answer.

You need to work from tenths to thousandths when you're adding decimals.



R

5a. Evie has taken a test. Mark her answers and write any corrections.

	corrections
$0.132 + 0.828 = 0.951$	
$0.703 + 0.07 = 0.71$	
$0.824 + 0.011 = 0.835$	
$0.351 + 0.039 = 0.381$	
$0.646 + 0.341 = 0.987$	



PS

6a. Which digits could you put in the empty spaces to make these statements correct?

$$0.454 + 0.2 \square = 0.7 \square 4$$

$$0.19 \square + 0.2 \square = 0.451$$



PS

## Year 5 Maths

### Adding Decimals Within 1

9a. What number do these counters represent?



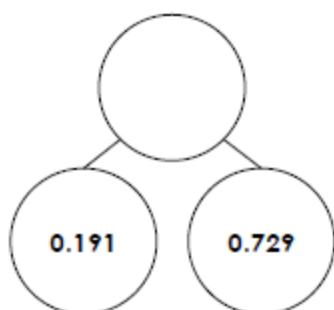
Add on three hundredths.

If you then add another 0.154, what number would you have?



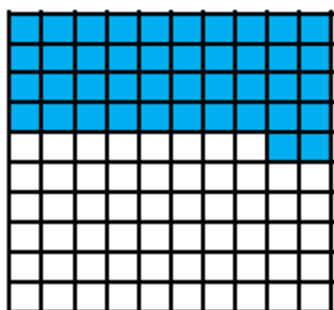
VF

10a. Complete the part whole model.



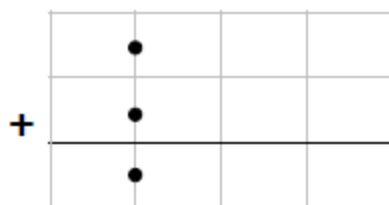
VF

11a. Use the square to add 4 tenths, 9 hundredths. What is your answer?



VF

12a. True or false?  $0.134 + 0.789 = 0.113$



VF

### Adding Decimals Within 1

7a. Check what Amany has said. Is she correct? If not, why not?

The sum of two numbers with 3 decimal places will always have 3 decimal places too.



PS

8a. Martin has taken a test. Mark his answers and write any corrections.

	corrections
$0.548 + 0.354 = 0.902$	
$0.003 + 0.879 = 0.909$	
$0.172 + 0.336 = 0.409$	
$0.626 + 0.275 = 0.901$	
$0.743 + 0.198 = 0.931$	



PS

9a. Which digits could you put in the empty spaces to make this statement balance?

$$0.4 \square 4 + 0.2 \square 8 = 0.126 + 0.616$$



PS

## Year 5 Maths

### Answers:

#### Varied Fluency Adding Decimals Within 1

##### Developing

1a. 0.42; 0.59

2a. 0.78

3a.  $0.25 + 0.002 = 0.27$

4a. False;  $0.52 + 0.02 = 0.54$

##### Expected

5a. 0.243; 0.257

6a. 0.561

7a.  $0.36 + 0.45 = 0.81$

8a. True

##### Greater Depth

9a. 0.262; 0.446

10a. 0.92

11a.  $0.42 + 0.49 = 0.91$

12a. False;  $0.134 + 0.789 = 0.923$

#### Reasoning and Problem Solving Adding Decimals Within 1

##### Developing

1a. Joanne is incorrect. She has added the two digits but not realised the 9 is 9 hundredths and the 1 is 1 tenth so the answer should be 0.19.

2a.

$0.83 + 0.01 = 0.09$	corrections 0.84
$0.62 + 0.26 = 8.8$	0.88
$0.34 + 0.62 = 0.96$	✓
$0.53 + 0.04 = 0.93$	0.57
$0.84 + 0.05 = 0.09$	0.89

3a. 5,8; 6,9

##### Expected

4a. Henri is incorrect. You work from the right to left, adding thousandths first, then hundredths and then tenths.

5a.

$0.132 + 0.828 = 0.951$	corrections 0.96
$0.703 + 0.07 = 0.71$	0.773
$0.824 + 0.011 = 0.835$	✓
$0.351 + 0.039 = 0.381$	0.39
$0.646 + 0.341 = 0.987$	✓

6a. 5,0; 6,1; 7,2; 8,3; 9,4 and 1,6

##### Greater Depth

7a. Amaya is incorrect. If the sum of the thousandths digits is equal to 10 thousandths, then this would be exchanged for 1 hundredth and there would be no need for the 0 (place holder) in the thousandths column if both numbers were 3 decimal places. Therefore the answer would have two decimal places.

8a.



$0.548 + 0.354 = 0.902$	✓	corrections
$0.003 + 0.879 = 0.909$		0.882
$0.172 + 0.336 = 0.409$		0.508
$0.626 + 0.275 = 0.901$	✓	
$0.743 + 0.198 = 0.931$		0.941

9a. 4,9; 5,8; 6,7; 7,6; 8,5; 9,4

## Year 5 Maths

### Subtracting Decimals Within 1

1a. Use the cubes and tables to calculate:

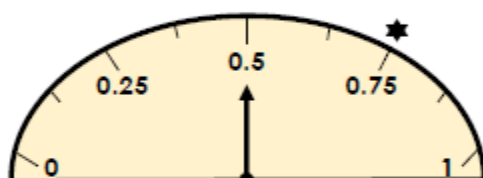
Ones	Tenths	Hundredths
		

How much is 2 tenths less than this?  
Now subtract 2 hundredths?



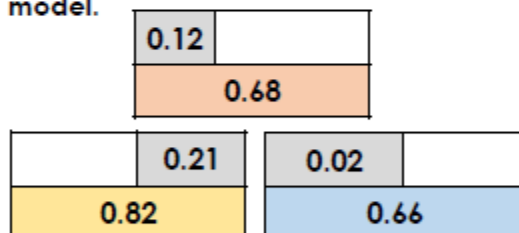
VF

2a. What is the difference between the reading on the scale and your target weight marked with \*.



VF

3a. Find the missing number in each bar model.



Now write each as a subtraction.



VF

4a. True or false?

$$0.88 - 0.16 = 0.72$$



VF

5a. Calculate the difference using the number line.



VF

### Subtracting Decimals Within 1

1a. Jesse solved these number sentences using  $<$ ,  $>$  or  $=$



$$0.43 - 0.21 > 0.21 + 0.34$$

$$0.94 - 0.04 < 0.09$$

$$0.72 - 0.22 = 0.31 + 0.19$$

$$0.4 - 0.03 > 0.07 + 0.3$$

Has she solved them correctly? Correct any mistakes you find.



PS

2a. Dogs need to be 0.79 m tall to enter the 'big dog' category at the dog show.

Geoff	0.54 m
Moss	0.86 m
Peanut	0.63 m
Foster	0.72 m
Trigger	0.77 m

Which dog is nearest to the category?  
By how much did they all miss out?



PS

3a. Using the digit cards below for subtraction, Fionn thinks the smallest number he can make is 0.2

4	7	2	8
---	---	---	---

	0	.		
—	0	.		
	0	.		

Is he correct? Explain your answer.






R

## Year 5 Maths

### Subtracting Decimals Within 1

6a. Use the cubes and tables to calculate:

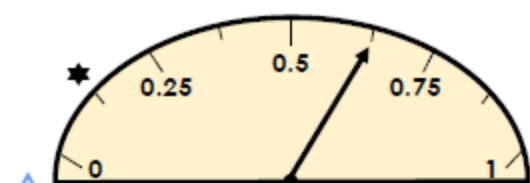
Ones	Tenths	Hundredths	Thousandths
			

How much is 3 tenths less than this?  
Now subtract 4 hundredths?  
What is another 6 thousandths less?



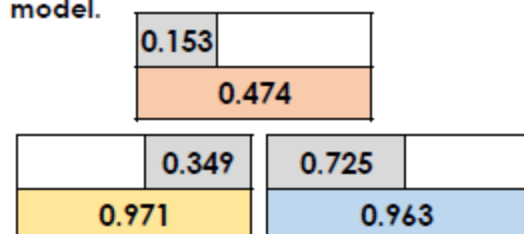
VF

7a. What is the difference between the reading on the scale and your target weight marked with ★.



VF

8a. Find the missing number in each bar model.



Now write each as a subtraction.



VF

9a. True or false?

$$0.863 - 0.276 = 0.612$$



VF

10a. Calculate the difference using the number line.



VF

### Subtracting Decimals Within 1

4a. Kamal solved these number sentences using <, > or =

$$0.882 - 0.764 < 0.201 + 0.48$$

$$0.394 - 0.146 > 0.2$$

$$0.164 - 0.04 < 0.002 + 0.122$$

$$0.67 - 0.393 < 0.3 - 0.13$$



Has he solved them correctly? Show why you think so correcting any mistakes you find.



PS

5a. Anna's running schedule has her covering 0.854km per day. Her trainer advised her to walk to warm up then run each day as follows:

Mon	0.263 km
Tues	0.447 km
Wed	0.568 km
Thurs	0.734 km
Fri	0.8 km

How far did she walk to warm up each day?



PS

6a. Using the digit cards below for subtraction, Kayla thinks the smallest number she can make will be > 0.1

7	3	9	5	4	1
---	---	---	---	---	---

0	.			
–	0	.		
	0	.		

Is she correct? Explain your answer.






R

## Year 5 Maths

### Subtracting Decimals Within 1

11a. Use the cubes and tables to calculate:

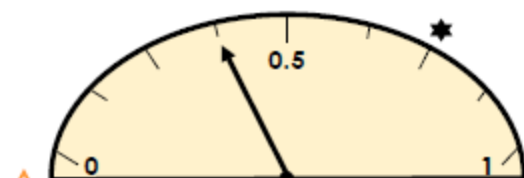
Ones	Tenths	Hundredths	Thousandths
			

How much is 8 tenths, 5 hundredths and 2 thousandths less than this?



VF

12a. What is the difference between the reading on the scale and your target weight marked with ★. Give your answer in kilograms.



VF

13a. Find the missing number in each bar model.

0.153	
0.731	

	0.049	0.157	
0.073		0.164	

Now write each as a subtraction.



VF

14a. True or false?

$$0.983 - 0.698 = 0.315$$



VF

15a. Calculate the difference using the number line.



VF

### Subtracting Decimals Within 1

7a. Graham solved these number sentences using  $<$ ,  $>$  or  $=$

$$0.513 - 0.064 < 0.01 + 0.008$$

$$0.94 - 0.046 > 0.086 + 0.808$$

$$0.784 - 0.096 = 0.992 - 0.304$$

$$0.973 - 0.073 < 0.134 + 0.766$$



Has he solved them correctly? Show why you think so correcting any mistakes you find.



PS

8a. Children must be 0.985m tall to ride the Rocket Launcher ride alone.

Timmy	0.983 m
Keeley	0.576 m
Honey	0.895 m
Jon	0.747 m
Libby	0.795 m

How much does each child have to grow to ride the Rocket Launcher?



PS

9a. Using the digit cards below for subtraction, Connor thinks the smallest number he can make will be:

$$< 0.01 \text{ and } > 0.004$$

8	9	2	3	5	1	0
---	---	---	---	---	---	---

0	.			
-	0	.		
0	.			

Is he correct? Explain your answer.



R

## Year 5 Maths

### Answers:

#### Reasoning and Problem Solving Subtracting Decimals Within 1

##### Varied Fluency Subtracting Decimals Within 1

###### Developing

1a. 0.73, 0.53, 0.51

2a. 0.25kg

3a. 0.56, 0.61, 0.64

4a. True.

5a. Various representations possible. The difference is 0.03

###### Expected

6a. 0.165, 0.125, 0.119

7a. 0.5kg

8a. 0.321, 0.622, 0.238

9a. False. The difference is 0.587

10a. Various representations possible. The difference is 0.319

###### Greater Depth

11a. 0.079

12a. 0.375kg

13a. 0.578, 0.024, 0.007

14a. False. The difference is 0.285

15a. 0.342

###### Developing

1a. Incorrect  $0.22 < 0.55$ ; incorrect  $0.9 > 0.09$ ; correct  $0.5 = 0.5$ ; incorrect  $0.37 = 0.37$

2a. 0.25m, +0.07m, 0.16m, 0.07m, 0.02m. Moss is in the 'big dog' category; Trigger is the closest to qualifying.

3a. Incorrect. Various possible answers, including:  $0.47 - 0.28 = 0.19$

###### Expected

4a. Correct  $0.118 < 0.681$ ; correct  $0.248 > 0.2$ ; incorrect  $0.124 = 0.124$ ; incorrect  $0.277 > 0.17$

5a. 0.591km, 0.407km, 0.286km. 0.12km, 0.054km

6a. Incorrect. Various possible answers, including:  $0.513 - 0.497 = 0.016$

###### Greater Depth

7a. Incorrect  $0.449 > 0.018$ ; incorrect  $0.894 = 0.894$ ; correct  $0.688 = 0.688$ ; incorrect  $0.9 = 0.9$

8a. 0.002m, 0.409m, 0.09m, 0.238m, 0.19m

9a. Incorrect because  $0.301 - 0.298 = 0.003$



## Year 5 Maths

### Complements to 1

1a. Look at the place value chart.

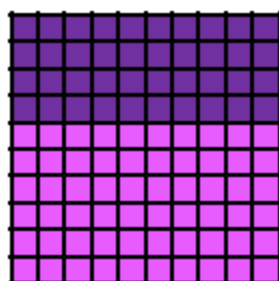
Ones	Tenths	Hundredths
	● ● ●	● ●

If we add 0.7 which columns would change? What would the new digits be?



VF

2a. Use the hundred square to create a subtraction and addition calculation with decimal numbers.



VF

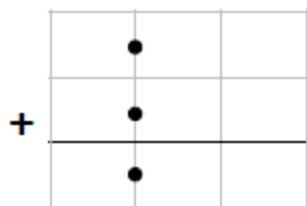
3a. Use the bar models to represent and complete the following calculation:

$$0.01 + \boxed{\phantom{00}} = 1$$



VF

4a. True or false?  $0.62 + 0.48 = 1$



VF

5a. Fill in the blanks.

$$0.81 + \boxed{\phantom{00}} = 1$$

$$0.13 + \boxed{\phantom{00}} = 1$$



VF

### Complements to 1

1a. Look at the calculation below.

$$0.3 \boxed{\phantom{00}} + 0.6 \boxed{\phantom{00}} = 1$$

Kayla says,



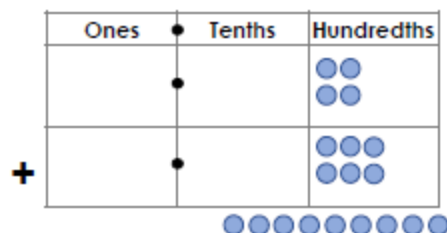
The two digits must be the same.

Is Kayla correct? Explain your answer.



R

2a. Use the counters to create a complement to 1. Some counters have been placed for you.



Place counters into any column to indicate their value. Use all the counters given.



PS

3a. Find the odd one out.

$$0.85 + 0.15$$

$$0.75 + 0.35$$

$$0.05 + 0.95$$

Explain your answer.



R

## Year 5 Maths

### Complements to 1

6a. Look at the place value chart.

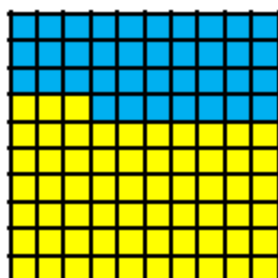
Ones	Tenths	Hundredths	Thousandths
	● ●●●●	●●	●●●●●

If we add 0.09 which columns would change? What would the new digits be?



VF

7a. Use the hundred square to create a subtraction and addition calculation with decimal numbers.



VF

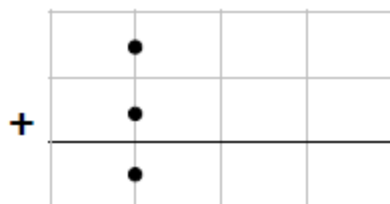
8a. Use the bar models to represent and complete the following calculation:

$$0.014 + \boxed{\phantom{000}} = 1$$



VF

9a. True or false?  $0.709 + 0.391 = 1$



VF

10a. Fill in the blanks.

$$0.067 + \boxed{\phantom{000}} = 1$$

$$0.284 + \boxed{\phantom{000}} = 1$$



VF

### Complements to 1

4a. Look at the calculation below.

$$0.3\boxed{\phantom{0}}5 + 0.6\boxed{\phantom{0}}5 = 1$$

Joey says,



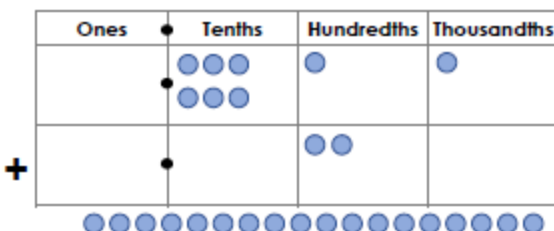
The two digits will always be bonds to ten.

Is Joey correct? Explain your answer.



R

5a. Use the counters to create a complement to 1. Some counters have been placed for you.



Place counters into any column to indicate their value. Use all the counters given.



6a. Find the odd one out.

$$0.123 + 0.877$$

$$0.945 + 0.055$$

$$0.025 + 0.975$$

$$0.207 + 0.803$$

Explain your answer.






R

# Year 5 Maths

## Complements to 1

**11a. Look at the place value chart.**

Ones	Tenths	Hundredths	Thousandths
			

If we add 0.099 which columns would change? What would the new digits be?



12a. Use the hundred square to create a subtraction and addition calculation with decimal numbers.



13a. What needs to be added to the following number to make 1?

zero and eighty-six thousandths



14a. True or false?

No zeros and seven tenths and seventy-nine thousandths  $+ 0.231 = 1$

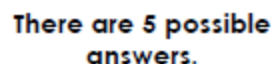



## Complements to 1

7a. Look at the calculation below.

$$0.1 \overline{)6} + 0.8 \overline{)4} = 1$$

Jamal says,



Is Jamal correct? Explain your answer.



8a. Use the counters to create a complement to 1. Some counters have been placed for you.

Ones	Tenths	Hundredths	Thousandths
		● ● ● ● ● ● ● ●	

Use as many counters as you need.



9a. Find the odd one out.

$$0.121 + 0.212 + 0.667$$

$$0.345 + 0.435 + 0.22$$

$$0.34 + 0.36 + 0.3$$

$$0.567 + 0.223 + 0.21$$

$$0.3 + 0.6 + 0.099$$

$$0.671 + 0.32 + 0.009$$

**Explain your answer.**



## Year 5 Maths

### Answers:

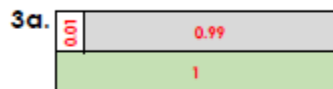
#### Varied Fluency Complements to 1

##### Developing

1a. The ones and the tenths columns would change. The new digits would be 1 in the ones and 0 in the tenths.

2a.  $0.4 + 0.6 = 1$

$1 - 0.4 = 0.6$  or  $1 - 0.6 = 0.4$



4a. False because  $0.62 + 0.48 = 1.1$

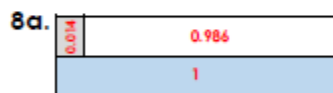
5a.  $0.19$      $0.87$

##### Expected

6a. The hundredths and tenths columns would change. The new digits would be 1 in the hundredths (0.01) and 5 in the tenths (0.5)

7a.  $0.37 + 0.63 = 1$

$1 - 0.63 = 0.37$  or  $1 - 0.37 = 0.63$



9a. False because  $0.709 + 0.391 = 1.1$

10a.  $0.933$      $0.716$

##### Greater Depth

11a. The tenths, and the thousandths columns would change. The new digits would be no digit in the thousandths and 6 in the tenths.

12a.  $0.635 + 0.365 = 1$

$1 - 0.635 = 0.365$  or  $1 - 0.365 = 0.635$

13a.  $0.914$

14a. False because  $0.779 + 0.231 = 1.01$

#### Reasoning and Problem Solving Complements to 1

##### Developing

1a. Kayla is incorrect. The digits will be number bonds to ten. The two digits will only be the same if they are both 5.

2a.

Ones	Tenths	Hundredths
0	Sum of 9	Sum of 10

3a.  $0.75 + 0.35$  is the odd one out because it is not a complement to 1; the others are.

##### Expected

4a. Joey is incorrect. The digits will never be number bonds as then the answer would not be 1 but 1.01. The digits will be a pair of bonds to 9

5a.

Ones	Tenths	Hundredths	Thousandths
0	Sum of 9	Sum of 9	Sum of 10

6a.  $0.207 + 0.803$  is the odd one out because it is not a complement to 1; the others are.

##### Greater Depth

7a. Jamal is incorrect as there are more than 5 possible answers.

8a.

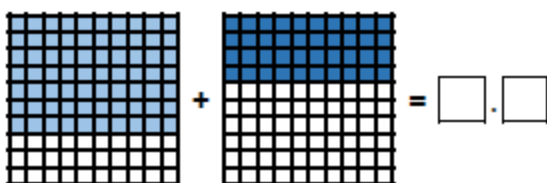
Ones	Tenths	Hundredths	Thousandths
0	Sum of 9	Sum of 10	0

9a.  $0.3 + 0.6 + 0.099$  is the odd one out because it is not a complement to 1; the others are.

## Year 5 Maths

### Adding – Crossing the Whole

1a. Use the hundredth squares to complete the calculation below.

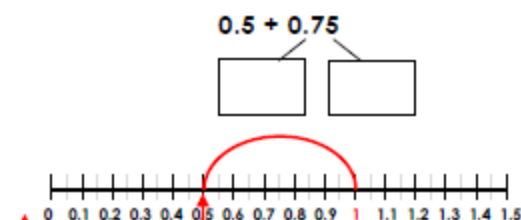


Use complements to 1 to help you.



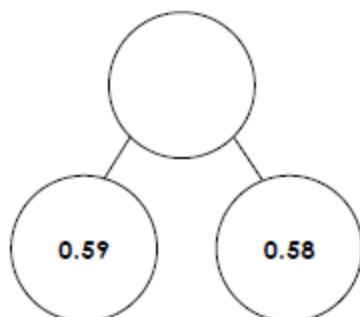
VF

2a. Use partitioning to find a complement to 1 and the number line to solve the calculation.



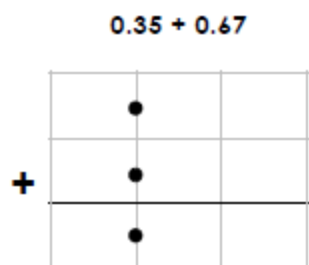
VF

3a. Complete the part whole model.



VF

4a. Complete the addition:



VF

### Adding – Crossing the Whole

1a. Dara has 2 tubs of sweets which weigh 1.25kg altogether.

One of the tubs is shown below.



Dara thinks the other tub weighs 0.61kg.

Is she correct? Convince me.



R

2a. Calculate the missing length on the strip of paper.



PS

3a. Compare the calculations below and complete using any of the following symbols:

< =

$0.04 + 0.97$	<input type="text"/>	$0.93 + 0.52$
$0.58 + 0.62$	<input type="text"/>	$0.79 + 0.41$
$0.61 + 0.63$	<input type="text"/>	$0.83 + 0.41$

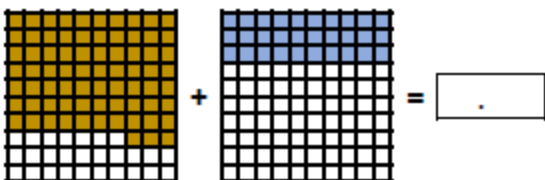


PS

## Year 5 Maths

### Adding – Crossing the Whole

5a. Use the hundredth squares to complete the calculation below.



Use complements to 1 to help you.



VF

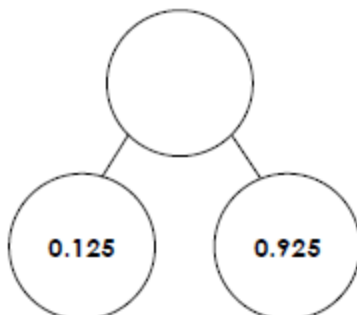
6a. Use partitioning to find a complement to 1 and the number line to solve the calculation.

$$0.625 + 0.575$$



VF

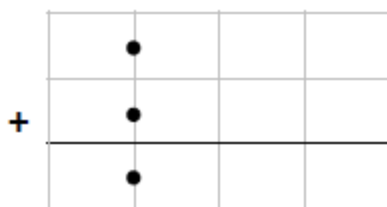
7a. Complete the part whole model.



VF

8a. Complete the addition:

$$0.653 + 0.373$$



VF

### Adding – Crossing the Whole

4a. Leyla has 2 jars of pickles which weigh 1.342kg altogether.

One of the jars is shown below.



0.879kg

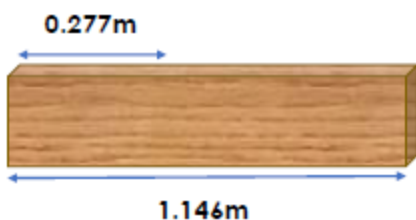
Leyla thinks the other jar weighs 0.453kg.

Is she correct? Convince me.



R

5a. Calculate the missing length on the wooden plank.



PS

6a. Compare the calculations below and complete using any of the following symbols:

< > =

0.761 + 0.542	<div style="border: 1px solid black; width: 30px; height: 20px;"></div>	0.653 + 0.694
0.496 + 0.687	<div style="border: 1px solid black; width: 30px; height: 20px;"></div>	0.395 + 0.788
0.918 + 0.843	<div style="border: 1px solid black; width: 30px; height: 20px;"></div>	0.089 + 0.935
0.452 + 0.567	<div style="border: 1px solid black; width: 30px; height: 20px;"></div>	0.405 + 0.603



PS

## Year 5 Maths

### Adding – Crossing the Whole

9a. Use the hundredth squares to complete the calculation below.



Use complements to 1 to help you.



VF

10a. Use partitioning to find a complement to 1 and the number line to solve the calculation.

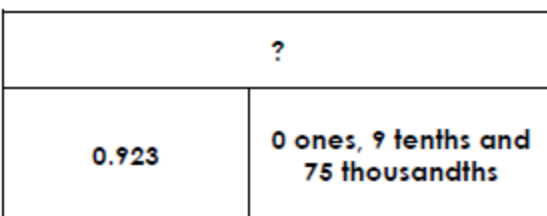
0 ones, 52 hundredths and 5 thousandths

+  
0.775



VF

11a. Complete the bar model.

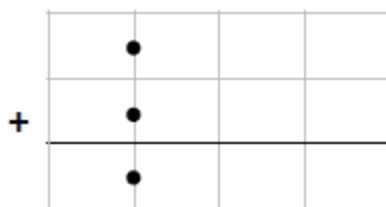


VF

12a. Complete the addition:

0 ones, 7 tenths and 16 thousandths

+  
0.497



VF

### Adding – Crossing the Whole

7a. Kim has 2 text books which weigh 1kg + 780g + 19g altogether.

One of the books is shown below.



0.976kg

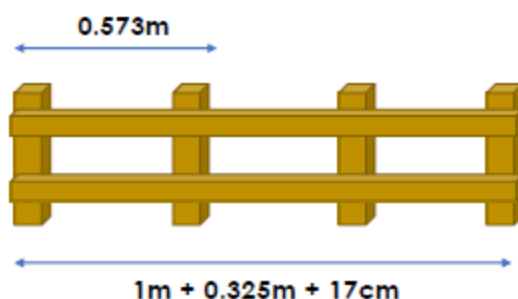
Kim thinks the other book weighs 822g.

Is she correct? Convince me.



R

8a. Calculate the missing length on the fence.



PS

9a. Compare the calculations below and complete using any of the following symbols:

< > =

1 one, 5 tenths and 42 thousandths    $0.803 + 0.756$

1 one, 68 hundredths and 3 thousandths    $0.914 + 0.769$

1 one, 9 tenths and 87 thousandths    $0.729 + 0.995$



PS

## Year 5 Maths

### Answers:

#### Varied Fluency Adding – Crossing the Whole

##### Developing

1a.  $0.7 + 0.4 = 1.1$

2a.  $0.5, 0.25; 0.5 + 0.75 = 1.25$

3a.  $1.17$

4a.  $1.02$

##### Expected

5a.  $0.73 + 0.3 = 1.03$

6a.  $0.375, 0.2; 0.625 + 0.575 = 1.2$

7a.  $1.05$

8a.  $1.026$

##### Greater Depth

9a.  $0.87 + 0.655 = 1.525$

10a.  $0.475$  and  $0.3; 0.525 + 0.775 = 1.3$

11a.  $1.898$

12a.  $1.213$

#### Reasoning and Problem Solving Adding – Crossing the Whole

##### Developing

1a. Dara is not correct because  $0.74\text{kg} + 0.61\text{kg} = 1.35\text{kg}$ . The other tub weighs  $0.51\text{kg}$ .

2a.  $0.78\text{m}$

3a.  $<, =, =$

##### Expected

4a. Leyla is not correct because  $0.879\text{kg} + 0.453\text{kg} = 1.332\text{kg}$ . The other jar weighs  $0.463\text{kg}$ .

5a.  $0.869\text{m}$

6a.  $<, =, >, >$

##### Greater Depth

7a. Kim is not correct because  $0.976\text{kg} + 822\text{g} = 1.798\text{kg}$ . The other book weighs  $823\text{g}$  or  $0.823\text{kg}$ .

8a.  $0.922\text{m}$  or  $92.2\text{cm}$

9a.  $<, =, >$



## Year 5 Maths

### Multiplication and Division Consolidation Questions

#### Reasoning and Problem Solving Multiplication and Division Consolidation – Year 5

#### Black Rock Island



Dazed and confused, Paulo opened his eyes wide and shook his head. The storm had been intense and his ship was wrecked.

He had walked for miles into the thick forest, hoping to find help, before falling into an exhausted and deep sleep. He awoke now and sensed immediate danger. Quickly, he got up and looked around the dense forest.

How would he know which way to go?

He remembered the scroll of paper his Uncle Deadeye had given him before he left home. He told him it might save his life. He quickly unfolded the paper.

*Look around and be aware  
for clues and riddles are  
everywhere!*

He searched all around and realised there was a plan of the forest pinned to a tree. It had a riddle on it. But danger was close by – he must work quickly.

1. If you want to escape from Black Rock, you must solve all our puzzles.  
The X shows your position. But time is ticking; we are coming!

##### Puzzle 1

Only circle the prime numbers which end in a 3, 7 or 9.

Follow the correct path and you survive. You may only move horizontally or vertically.

			83	39	57	17	67	53	47	
			33			73				
					69	43	61	29	27	
				97	13	29			79	11
			33	59		63				
	51	45	X	37	81					
			21		9	83				
			49			99	91	35		

## Year 5 Maths

Paulo reached the edge of the forest and ran. He knew danger was closing in. Suddenly, an arrow flew past his head and he dived into a cave for safety. Pressing his back against the wall, he held his breath – his heart thudding, but before he knew it, the huge rock at the doorway rolled across and his exit was blocked. Trapped... or was he? He remembered Uncle Deadeye's note. He looked all around and by the cave door spotted some rocks with numbers carved in them. A code!



### Puzzle 2

The code is made up of two 3-digit numbers.  
When I multiply the numbers by 100, the ten-thousands in the first number and the thousands digits in the second number are the same.  
The sum of the digits is 5.  
Which two numbers could they be? Numbers can be re-used.  
Press the correct number rocks and the door will open.

2. Which cave number rocks should he press?

--	--	--	--	--	--

Got it! The rock rolled away and Paulo was free. Tentatively, he stepped from the cave. Silence. His steps turned from walking, to jogging, to sprinting. Still he knew danger was just around the corner.

Up ahead, he saw a pyramid. The searing heat was intense, so he stepped inside for shade. The walls were enormous and Paulo, mesmerized, wandered deeper into the cave, but before he knew it he was lost!

3. A maze - and now he couldn't find the way back out. He searched around for the puzzle. The walls appeared to have numbers carved into them but which numbers should he follow?

### Puzzle 3

Find the missing factor pairs.  
Follow those numbers  
through the maze to escape  
through the dashed, green  
exit on the bottom row.

You are positioned at X.

1	48
2	
6	

15	X	18	20
9	48	1	16
35	4	3	12
45	1	16	8
7	42	24	6



## Year 5 Maths

The heat hit him again as he exited the maze, but he was surrounded. The tribe had found him! What next? Was it the end for Paulo? The tribe marched him to their chief.

4. The chief had one last riddle for him.



Find the ages of my family members and I will let you go.  
Here are my clues.  
Write their ages in the sand.

### Puzzle 4

Brother - has an age that is a squared number.  
It is an odd number below 30 but above 10.

Mother - has an age that is a cubed number.  
It is an even number over 60 but below 90.

Two daughters – one has an age that is a cubed number. She is half her sister's age, which is a squared number. They are both between 5 and 20.

Brother's age:

Mother's age:

Daughter 1's age:

Daughter 2's age:

The chief was impressed by Paulo's mathematical skills. He could tell Paulo was no threat to the tribe. The chief handed him some wood and told Paulo to head to the shore and there he would find forty-one metre square planks and rope. He could build himself a raft. He gave Paulo some great survival tips, but one stayed in his mind: *The raft must be a square to float and be the biggest you can make.* However, Paulo was tired and exhausted and was about to make a mistake which could cost him his life.



Paulo

$6\text{m}^2$  is equal to 12m.  
I only need 12 planks  
to make my square  
raft.

5. Explain his mistake to him before it's too late. Work out how many planks he really needs.

------------------------------------------

## Year 5 Maths

Paulo set sail. He wondered how far it would be until he reached home. Suddenly, he remembered Uncle Deadeye had also given him a map. He took the map from his pocket.



He measured the map and thought carefully about how to calculate the distance home. But he was still exhausted.



Paulo

I've measured 12cm on the map.  
So I think I've got 12,000 miles to  
get home because  
 $12,000 \div 100 = 12\text{cm}$   
But then if I do the inverse  
 $12 \times 100 = 1,200!$   
So do I have 1,200 or 12,000 miles  
to get home? I'm so tired and  
confused!

6. Explain to Paulo how far it is to reach home and where he went wrong.

After a long journey, he reached home and ran into Uncle Deadeye's arms. But Paulo was intrigued!

"How did you know all about the island?" he asked his uncle.

"Well, maybe one day you will find out Paulo. But for now at least you're home safe and well." replied Uncle Deadeye, as he pulled down his eyepatch.



## Year 5 Maths

### Answers:

#### Multiplication and Division Consolidation – Year 5

1. The numbers to follow are 37, 59, 97, 13, 29, 43, 73, 17, 67, 53 and 47.

If you want to escape from Black Rock, you must solve all our puzzles.  
The X shows your position. But time is ticking; we are coming!

**Puzzle 1**  
Only circle the prime numbers which end in a 3, 7 or 9.  
  
Follow the correct path and you survive. One wrong move and you may not be alive!

			83	39	57	17	67	53	47	
			33			73				
					69	43	61	29	27	
				97	13	29			79	11
			33	59		63				
	51	45	X	37	81					
			21		9	83				
			49			99	91	35		

2. Various answers. Two numbers Paulo could press are:

1	3	1
---	---	---

2	1	2
---	---	---

$A = 13,100$  and  $B = 21,200$

The sum of both three-digit numbers is 5 ( $1 + 3 + 1 = 5$ ;  $2 + 1 + 2 = 5$ ).

3.

1	48
2	24
3	16
4	12
6	8

15	X	18	20
9	48	1	16
35	4	3	12
45	1	16	8
7	42	24	6

4. Various answers. Brother = 25 ( $5^2$ ); Mother = 64 ( $4^2$ ); Daughter 1 = 8 ( $2^3$ ) and Daughter 2 = 16 ( $4^2$ ). 8 is half of 16.
5. Paulo has multiplied 6 by 2 instead of calculating  $6^2$  which equals 36. He needs 36 planks which is also the biggest raft he can make as  $7 \times 7 = 49$  and he only has 40 planks.
6. Paulo has 1,200 miles to reach home. He calculated  $12 \times 100$  incorrectly as 12,000 to begin with. This then made his division incorrect.  $1,200 \div 100 = 12\text{cm}$  so he has 1,200 miles to reach home.