



W.C. 1<sup>st</sup> June

## Maths Answers

Monday

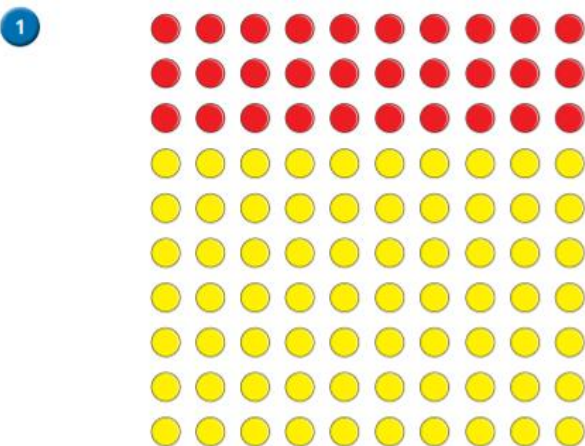
### Fluent in 5

Remember, (M) is written next to those questions you should have tried to solve mentally first. (W) means a written method is usually more efficient for this question.

1.  $340 + 290 = 630$  (M)
2.  $194,849 + 3,843,483 = 4,038,332$  (W)
3.  $1,131 \div 29 = 39$  (W)
4.  $660 \div 220 = 3$  (M)
5.  $\frac{4}{5} - \frac{1}{5} = \frac{3}{5}$  (M)

### Convert fractions into percentages

#### Mild



- a) What fraction of the array of counters is red?  $\frac{3}{10}$
- b) What fraction of the array of counters is yellow?  $\frac{7}{10}$
- c) What percentage of the array of counters is red? 30 %
- d) What percentage of the array of counters is yellow? 70 %
- e) What do you notice about the two percentages?

Write the fractions as percentages.

$$\frac{40}{100} = \boxed{40} \%$$

$$\frac{65}{100} = \boxed{65} \%$$

$$\frac{1}{2} = \boxed{50} \%$$

$$\frac{7}{10} = \boxed{70} \%$$

3 Fill in the missing numbers.

$$\text{a) } \frac{9}{10} = \frac{\boxed{90}}{100} = \boxed{90} \%$$

$$\text{c) } \frac{9}{50} = \frac{\boxed{18}}{100} = \boxed{18} \%$$

$$\text{b) } \frac{9}{20} = \frac{\boxed{45}}{100} = \boxed{45} \%$$

$$\text{d) } \frac{9}{25} = \frac{\boxed{36}}{100} = \boxed{36} \%$$

Match equivalent fractions to the correct percentages.

$$\frac{5}{10} = \frac{50}{100} = 50\%, \quad \frac{9}{10} = \frac{90}{100} = 90\%,$$

$$\frac{2}{10} = \frac{20}{100} = 20\%, \quad \frac{3}{10} = \frac{30}{100} = 30\%$$

True or false?

**False,  $\frac{6}{10}$  is 60%.**

### Medium

$$\frac{3}{5} = \frac{60}{100} = 60\%, \quad \frac{26}{50} = \frac{52}{100} = 52\%,$$

$$\frac{1}{20} = \frac{5}{100} = 5\%, \quad \frac{5}{25} = \frac{20}{100} = 20\%$$



$\frac{1}{10}$  is 10%, so  $\frac{1}{20}$  must be 20%.

Explain the mistake that Ron has made.

What is the correct answer?

$$\frac{1}{20} = \boxed{5} \%$$

Convert the fractions to percentages.

a)  $\frac{1}{4} = \boxed{25\%}$

b)  $\frac{1}{5} = \boxed{20\%}$

$$\frac{1}{2} = \boxed{50\%}$$

$$\frac{2}{5} = \boxed{40\%}$$

$$\frac{3}{4} = \boxed{75\%}$$

$$\frac{4}{5} = \boxed{80\%}$$

c)  $\frac{16}{20} = \boxed{80\%}$

d)  $\frac{45}{50} = \boxed{90\%}$

$$\frac{8}{20} = \boxed{40\%}$$

$$\frac{9}{10} = \boxed{90\%}$$

$$\frac{4}{20} = \boxed{20\%}$$

$$\frac{18}{20} = \boxed{90\%}$$

Ava-Lily = 76%; Tyrese = 40%; Rochelle = 72%; Ava-Lily reaches the final.

### Spicy

What percentage of the grid is yellow?

6 %

a) Use each digit card once to make the statements correct.

1

2

3

4

5

$$\frac{\frac{1}{2}}{2} > \frac{4}{100} \text{ } 0\%$$

$$75\% = \frac{3}{4}$$

$$\frac{3}{5} < 65\%$$

Match the fractions to the correct percentages.

$$\frac{36}{45} = 80\% , \quad \frac{66}{75} = 88\% ,$$

$$\frac{21}{28} = 75\% , \quad \frac{12}{80} = 15\%$$

What percentage did each child score?

Amie = 25%; Robert = 75%; David = 40%; Robert reaches the final.

True or false?

a) False,  $\frac{14}{70}$  is 20%.

b) True

## Tuesday

### Fluent in 5

Remember, (M) is written next to those questions you should have tried to solve mentally first. (W) means a written method is usually more efficient for this question.

1.  $86.32 + 7.493 = \mathbf{93.813}$  (W)

2.  $810 \div 90 = \mathbf{9}$  (M)

3.  $\frac{2}{3} - \frac{1}{12} = \frac{\mathbf{7}}{\mathbf{12}}$  (M)

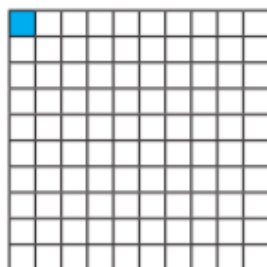
4.  $\mathbf{2,296} \div 41 = 56$  (W)

5.  $980 + 130 = \mathbf{1,110}$  (M)

### Convert common equivalent fractions, decimals and percentages

#### Mild

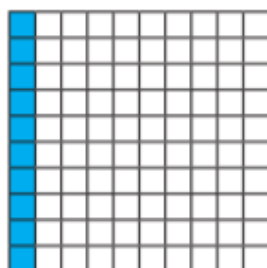
- 1 What fraction, decimal and percentage of each grid is shaded blue?



fraction =  $\frac{\mathbf{1}}{\mathbf{100}}$

decimal =  $\mathbf{0.01}$

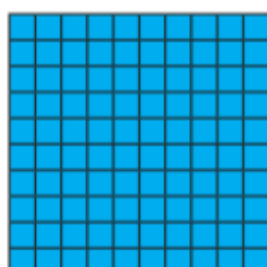
percentage =  $\mathbf{1\%}$



fraction =  $\frac{\mathbf{1}}{\mathbf{10}}$

decimal =  $\mathbf{0.1}$

percentage =  $\mathbf{10\%}$



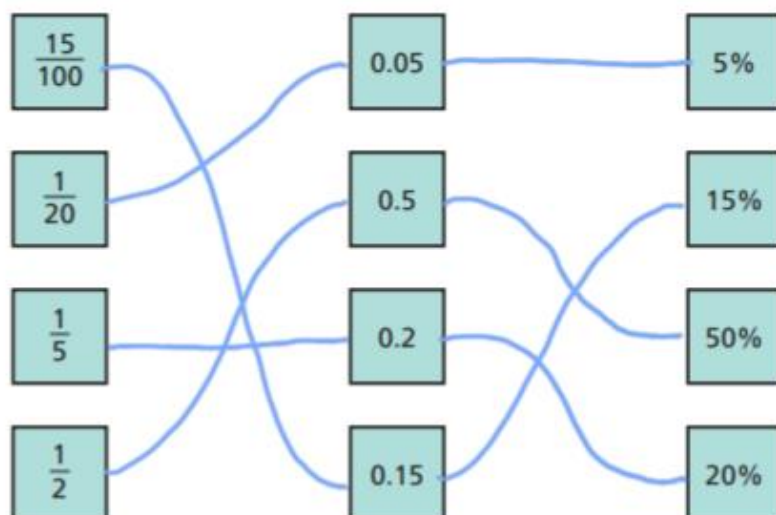
fraction =  $\frac{\mathbf{100}}{\mathbf{100}}$

decimal =  $\mathbf{1}$

percentage =  $\mathbf{100\%}$

2

Match the equivalent fractions, decimals and percentages.



What proportion of the grid is unshaded?

Write your answer as a fraction, decimal and percentage.

fraction =  $\frac{6}{25}$  decimal = 0.24 percentage = 24%

## Medium

Complete the table.

| Fraction         | Decimal | Percentage |
|------------------|---------|------------|
| $\frac{21}{100}$ | 0.21    | 21%        |
| $\frac{3}{25}$   | 0.12    | 12%        |
| $\frac{2}{10}$   | 0.2     | 20%        |
| $\frac{2}{5}$    | 0.4     | 40%        |
| $\frac{11}{25}$  | 0.44    | 44%        |
| $\frac{1}{25}$   | 0.04    | 4%         |
| $\frac{3}{4}$    | 0.75    | 75%        |
| $\frac{99}{100}$ | 0.99    | 99%        |

Amir was asked to complete the statement using  $<$ ,  $>$  or  $=$ .

14%  $>$  0.4



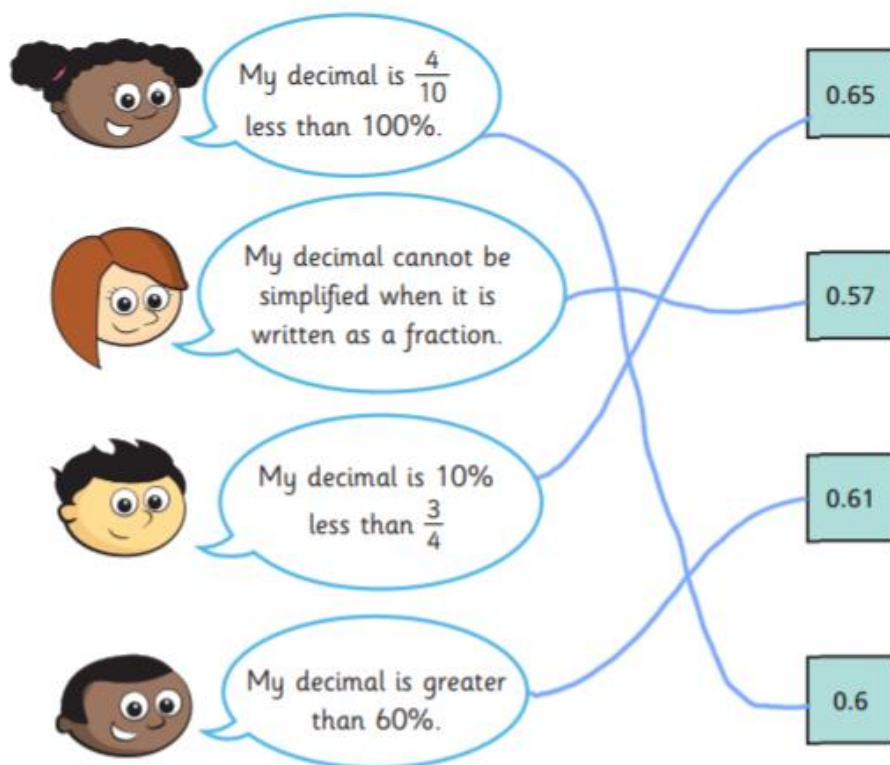
14 is greater than 4

What mistake has Amir made?

He hasn't compared them in the same form.  $0.4 = 40\%$   
and  $40\% > 14\%$  so  $14\% < 0.4$

Tommy answered more questions correctly because  $\frac{3}{5}$  as a percentage is 60% and this is less than 62%

## Spicy



Use the digit cards to write a decimal greater than  $\frac{1}{5}$  but less than 40%.

You may not use a card more than once in each number.



Eg. 0.24

Dora is correct

because  $\frac{18}{50} = \frac{36}{100}$

A = 0.3, 30% or  $\frac{3}{10}$

B = 0.2, 20%,  $\frac{2}{10}$  or  $\frac{1}{5}$

C = 0.1, 10% or  $\frac{1}{10}$

## Wednesday

### Fluent in 5

Remember, (M) is written next to those questions you should have tried to solve mentally first. (W) means a written method is usually more efficient for this question.

1.  $983,483 - 894,674 = 88,809$  (W)

2.  $890 + 130 = 1,020$  (M)

3.  $80 \times 70 = 5,600$  (M)

4.  $\frac{5}{6} - \frac{1}{3} = \frac{3}{6}$  or  $\frac{1}{2}$  (M)

5.  $596 \times 3 = 1,788$  (W)

### Order and compare fractions, decimals and percentages

#### Mild

1 Write  $<$ ,  $>$  or  $=$  to complete the statements.

a)  $64\%$   $>$   $0.46$

d)  $0.8$   $=$   $80\%$

b)  $0.96$   $<$   $\frac{97}{100}$

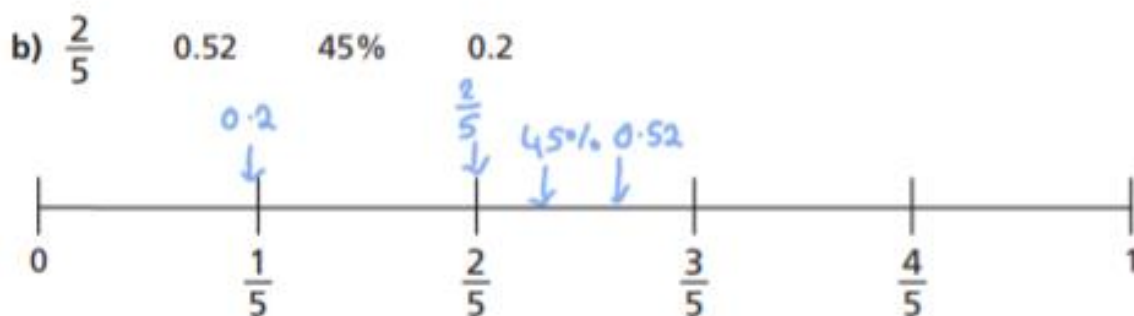
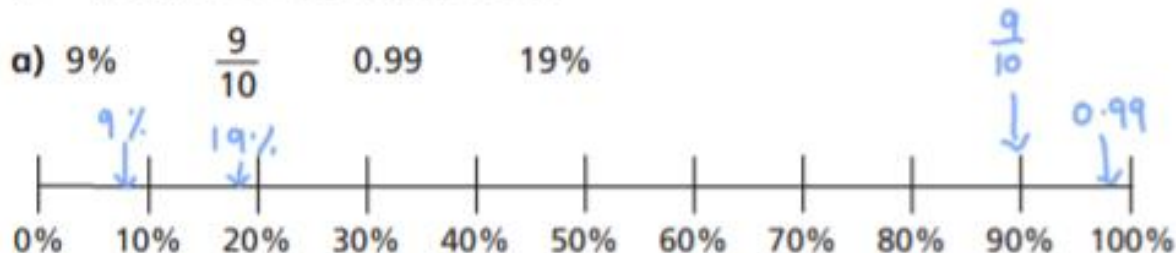
e)  $67\%$   $<$   $\frac{7}{10}$

c)  $\frac{3}{5}$   $>$   $35\%$

f)  $\frac{7}{20}$   $>$   $0.3$

2

Draw arrows to estimate the positions of the fractions, decimals and percentages on the number line.



3

Write the fractions, decimals and percentages in ascending order.

a)  $\frac{7}{10}$        $\frac{13}{100}$       21%      0.9

$\frac{13}{100}, 21\%, \frac{7}{10}, 0.9$

b) 0.6      61%       $\frac{37}{50}$       0.66

0.6, 61%, 0.66,  $\frac{37}{50}$

c) 47%      0.89       $\frac{63}{100}$       12%

12%, 47%,  $\frac{63}{100}, 0.89$

### Medium

These fractions, decimals and percentages are in descending order.

99%       $\frac{89}{100}$       0.7            0.5      49%

Tick the fractions, decimals and percentages that could fill the gap.

0.78      51% ✓       $\frac{3}{5}$  ✓      0.6 ✓       $\frac{4}{10}$

Tommy scored  $\frac{40}{50}$  on a Maths test.

Aisha got 78% of the test correct.

Aisha thinks she has done better because 78 is greater than 40

Do you agree with Aisha? No

Explain your answer.

$\frac{40}{50} = 80\%$  and  $80\% > 78\%$  so Tommy did better.

5. Most children are 11.  $\frac{3}{5}$  is the same as  $\frac{60}{100}$  which is equivalent to 60%.

This is more than the 40% who are 10 years old.

6. The busiest class is the 7 to 14 group,  $\frac{25}{50}$  of the children which is equal to 50%.

There are only 45% under seven, and  $\frac{1}{20}$  is the same as 5% so the 14 plus group has the least members.

## Spicy

Who drank the most? Show your working.

Scott drank the most.

Who drank the least? Show your working.

Huan drank the least.

a) Use the digit cards to make the statement correct.



$$0.3 < \frac{\boxed{4}}{10} < 80\%$$

How many different solutions can you find?

Various answers.

b) Use the digit cards to write a percentage greater than  $\frac{2}{5}$  but less than 75%.



$$\frac{2}{5} < \boxed{0.43} < 0.75$$

How many different percentages can you find?

Various answers.

9. 'Other' was the least popular, with  $\frac{3}{100}$  which is 3%, gold with 12%, white with 21% and the most popular was black with  $\frac{16}{25}$  which is equivalent to 64%.

10. Candidates names should be read out in the following order: Lewis Taylor and Caleb Browne tied (5%), Leah Norman (15%), Aaminah Khan (35%) and Lynda Clarke who wins (40%).

# Thursday

## Fluent in 5

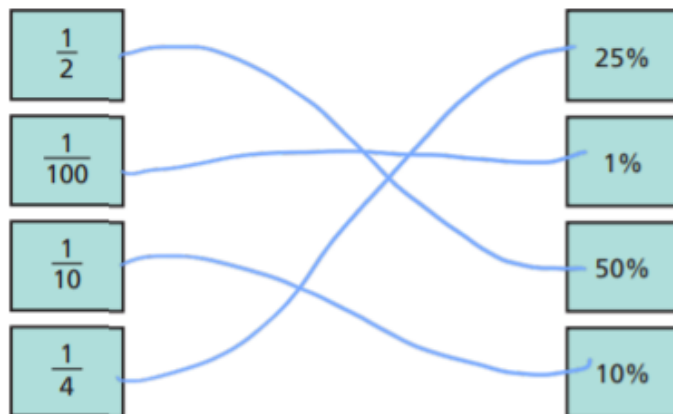
Remember, (M) is written next to those questions you should have tried to solve mentally first. (W) means a written method is usually more efficient for this question.

1.  $450 + 3,400 = 3,850$  (M)
2.  $983,493 + 893,983 = 1,877,476$  (W)
3.  $900 \times 300 = 270,000$  (M)
4.  $4,496 \div 8 = 562$  (W)
5.  $\frac{4}{4} - \frac{1}{8} = \frac{7}{8}$  (M)

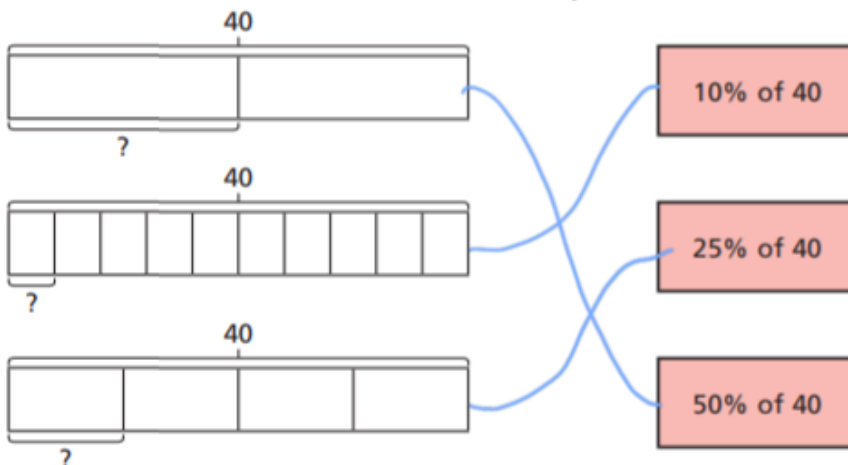
## Find percentages of amounts

### Mild

- 1 Match the equivalent fractions to the percentages.



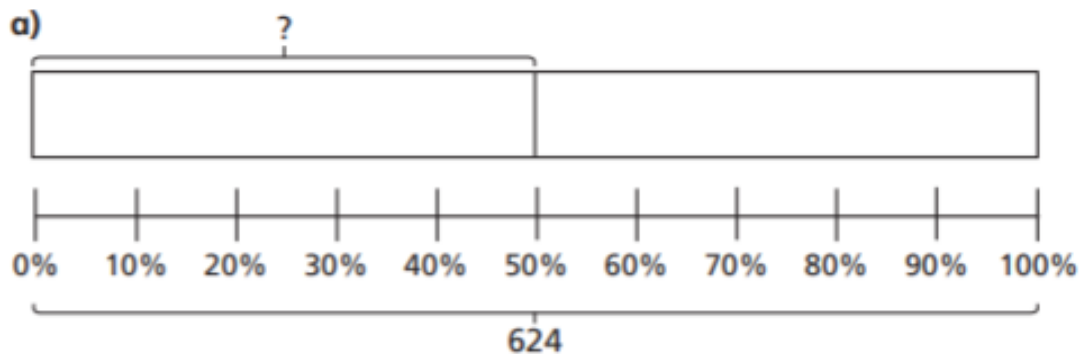
- 2 Match each bar model to the statement it represents.



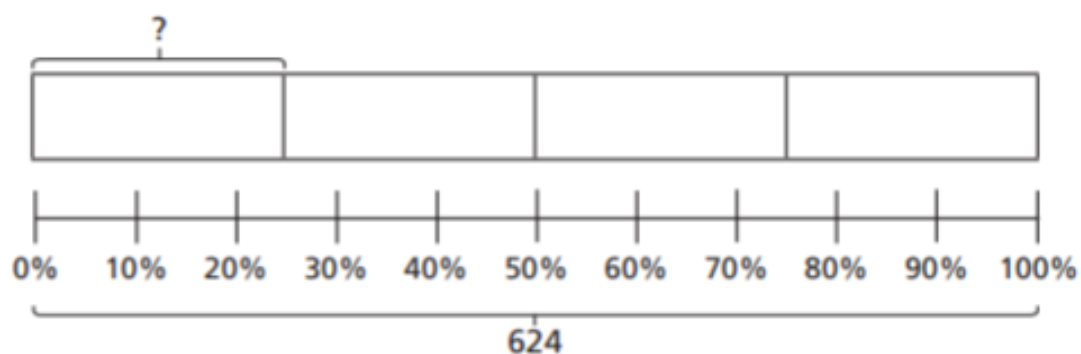
3

Use the bar models to help you complete the calculations.

a)



$$50\% \text{ of } 624 = \boxed{312}$$

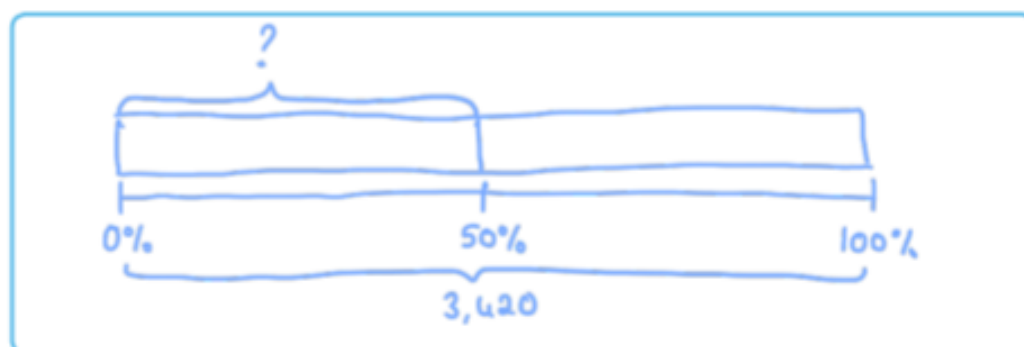


$$25\% \text{ of } 624 = \boxed{156}$$

What do you notice about your answers?

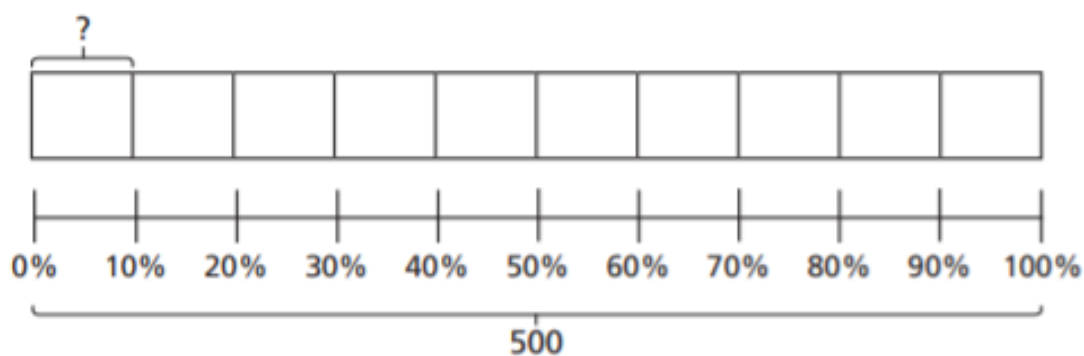
b) Use bar models to complete the calculations.

$$50\% \text{ of } 3,420 = \boxed{1,710}$$



4.

a) Use the bar model to find 10% of 500



$$10\% \text{ of } 500 = \boxed{50}$$

b) Use your answer to part a) to help you complete the calculations.

$$20\% \text{ of } 500 = \boxed{100}$$

$$70\% \text{ of } 500 = \boxed{350}$$

$$90\% \text{ of } 500 = \boxed{450}$$

$$60\% \text{ of } 500 = \boxed{300}$$

$$30\% \text{ of } 500 = \boxed{150}$$

$$100\% \text{ of } 500 = \boxed{500}$$

## Medium

Complete the calculations.

a) 50% of 3,000 =

c) 10% of 3,000 =

50% of 1,500 =

10% of 1,500 =

50% of 500 =

10% of 500 =

b) 25% of 3,000 =

d) 1% of 3,000 =

25% of 1,500 =

1% of 1,500 =

25% of 500 =

1% of 500 =

Workers in a toy factory aim to pack 2,560 boxes each day.

At 10:00 am they have completed 25% of their target.

a) How many boxes have they packed?

By midday they have packed 50% of their target.

At 2:00 pm they have packed another 10% of their target.

b) How many more boxes do they need to pack to meet the daily target?

They need to pack  more boxes.

## Two-Step Word Problems Percentage of Amounts

1. 170g    2. 30m    3. 1500 books    4. 322 miles

## Spicy

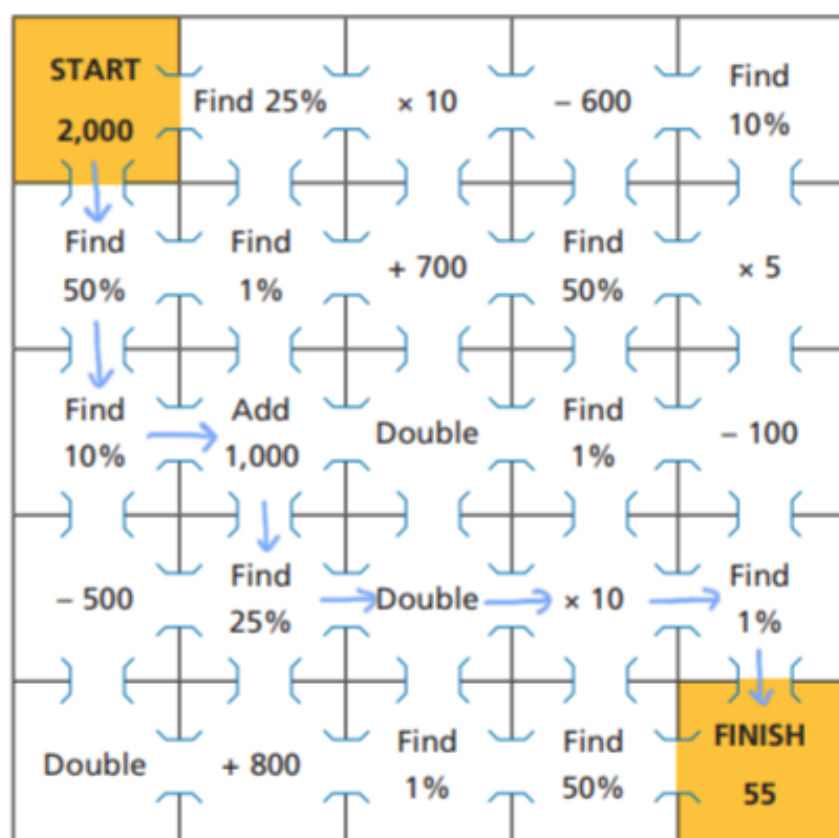
Anya ate 240g. Shae ate 60g. Shae ate 180g less than Anya.  
Eli ate 150g. Junior ate 50g. Junior ate 100g less than Eli.

|                    |                   |                      |
|--------------------|-------------------|----------------------|
| 50% of 250<br>125  | 10% of 20<br>2    | 1% of 350<br>3.5     |
| 25% of 836<br>209  | 20% of 240<br>48  | 75% of 480<br>360    |
| 10% of 345<br>34.5 | 1% of 1,800<br>18 | 50% of 2300<br>1,150 |

- a) 1, 719  
b) 23.5  
c) Yes,  $25\% \text{ of } 836 + 50\% \text{ of } 250 + 10\% \text{ of } 20 = 336$

Sienna sold 30 ginger, 50 chocolate, 20 cranberry and 100 blueberry. She sold 200 buns altogether.

Follow the steps to find a way through the maze.

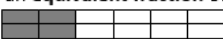


# Friday

## Challenge Day!

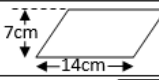
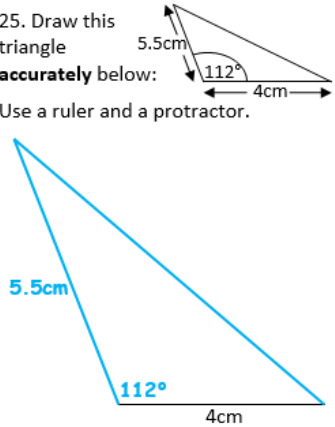
## Key Skills

## Mild

| A: Place Value, Add and Subtract                                                  |                       | B: Multiply, Divide and Fractions                                                                                                              |                                                                      | C: Measure and Problem Solving                                                                                                          |                          |
|-----------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1. What is the value of the <b>8</b> in this number?<br>7,186,354                 | 5:1<br><b>80,000</b>  | 11. Which is a <b>common factor</b> of 14 and 35? 2 3 5 7 14                                                                                   | 5:8<br><b>7</b>                                                      | 21. Ben managed to eat $\frac{4}{5}$ of his pizza.<br>Tom managed to eat 75% of his pizza. Who ate the most?                            | 5:19<br><b>Ben (80%)</b> |
| 2. Write <b>one million, five thousand, three hundred and nineteen</b> in digits. | 5:1<br>1,500,319      | 12. Is 39 a <b>prime number</b> ? How do you know?                                                                                             | 5:9<br><b>No, ÷ 3/13</b>                                             | 22. How many <b>millilitres</b> are there in <b>0.42 litres</b> ?                                                                       | 5:20<br><b>420</b>       |
| 3. Round 596,147 to the <b>nearest thousand</b> .                                 | 5:2<br><b>596,000</b> | 13. 329 x 13                                                                                                                                   | 5:10<br><b>4,277</b>                                                 | 23. Calculate the <b>perimeter</b> of this shape.                                                                                       | 5:21<br><b>76cm</b>      |
| 4. What is the missing number?<br>924 1,024 <input type="text"/> 1,224            | 5:2<br><b>1,124</b>   | 14. 321.5 ÷ 100                                                                                                                                | 5:11<br><b>3.215</b>                                                 | 24. Estimate the volume of this shape. Write a, b or c.<br>a. 8 cm <sup>3</sup> .<br>b. 12 cm <sup>3</sup> .<br>c. 16 cm <sup>3</sup> . | 5:22<br><b>a</b>         |
| 5. What temperature is 9 degrees less than 0 degrees Celsius?                     | 5:3<br><b>-9°C</b>    | 15. What is <b>9<sup>2</sup></b> ?                                                                                                             | 5:12<br><b>81</b>                                                    | 25. Sarah started a test at <b>12.45pm</b> . The test is <b>105 minutes</b> long. What time does Sarah finish her test?                 | 5:23<br><b>2.30pm</b>    |
| 6. What number is represented by these Roman Numerals? <b>CCCXIII</b>             | 5:4<br><b>313</b>     | 16. $\frac{4}{7} + \frac{3}{14} =$                                                                                                             | 5:13<br><b><math>\frac{11}{14}</math></b>                            |                                                                                                                                         |                          |
| 7. 237,675 – 24,700 =                                                             | 5:5<br><b>212,975</b> | 17. Find an <b>equivalent fraction</b> of $\frac{2}{6}$ .<br> | 5:14<br><b><math>\frac{1}{3}</math> or <math>\frac{4}{12}</math></b> |                                                                                                                                         |                          |
| 8. 41,380 + 19,805 =                                                              | 5:5<br><b>61,185</b>  | 18. Write $\frac{19}{7}$ as a <b>mixed number</b> .                                                                                            | 5:15<br><b><math>2\frac{5}{7}</math></b>                             |                                                                                                                                         |                          |
| 9. Complete this sum without written working. 12,300 + 4,200 =                    | 5:6<br><b>16,500</b>  | 19. $\frac{5}{6} \times 36 =$                                                                                                                  | 5:16<br><b>30</b>                                                    |                                                                                                                                         |                          |
| 10. I buy 2 CDs costing £7.45 each. How much change do I get from £20?            | 5:7<br><b>£5.10</b>   | 20. Round 0.97 to 1 decimal place.                                                                                                             | 5:17<br><b>1(.0)</b>                                                 |                                                                                                                                         |                          |
| Total (A)                                                                         |                       | Total (B)                                                                                                                                      |                                                                      | Total (C)                                                                                                                               |                          |
| Test Total (A+B+C)                                                                |                       | R (0-9)                                                                                                                                        | Y (10-19)                                                            | G (20-25)                                                                                                                               |                          |

# Key Skills

## Medium and Spicy

| A: Place Value, Add, Subtract, Multiply and Divide                                  |                                  | B: Fractions, Ratio, Proportion and Algebra                                                 |                                        | C: Measure and Geometry                                                                                                                                                  |                                                                                              |
|-------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 1. Write <b>two million, six hundred and twelve thousand and thirty</b> in digits.  | <sup>6:1</sup><br>2,612,030      | 11. Which is the <b>smallest</b> fraction? $\frac{1}{3}$ , $\frac{4}{9}$ or $\frac{11}{27}$ | <sup>6:7</sup><br>$\frac{1}{3}$        | 21. How many <b>miles</b> are about equal to 12 <b>kilometres</b> ?                                                                                                      | <sup>6:18</sup><br><b>7.5</b>                                                                |
| 2. What is the value of the <b>7</b> in this number?<br>5,273,914                   | <sup>6:1</sup><br><b>70,000</b>  | 12. $\frac{7}{10} + \frac{4}{15} =$                                                         | <sup>6:8</sup><br>$\frac{29}{30}$      | 22. Give the length and width of <b>two</b> rectangles that have an area of 12m <sup>2</sup> .                                                                           | <sup>6:20</sup><br><b>1x12, 2x6, 3x4</b>                                                     |
| 3. Round 8.427 to 2 decimal places.                                                 | <sup>6:1</sup><br><b>8.43</b>    | 13. Simplify your answer. $\frac{6}{10} \times \frac{3}{4} =$                               | <sup>6:9</sup><br>$\frac{9}{20}$       | 24. Find the <b>area</b> of this <b>parallelogram</b> .<br>                           | <sup>6:21</sup><br><b>98cm<sup>2</sup></b>                                                   |
| 4. Write the largest possible crowd.<br>Attendance: 5,000 (to the nearest thousand) | <sup>6:2</sup><br><b>5,499</b>   | 14. 1.78 x 1000                                                                             | <sup>6:10</sup><br><b>1,780</b>        | 24. Calculate the <b>volume</b> of a cube with a 10cm side length.<br>                | <sup>6:22</sup><br><b>1000cm<sup>3</sup></b>                                                 |
| 5. 2,486 x 62                                                                       | <sup>6:3</sup><br><b>154,132</b> | 15. 3.56 x 7                                                                                | <sup>6:11</sup><br><b>24.92</b>        | 25. Draw this triangle <b>accurately</b> below:<br>Use a ruler and a protractor.<br> | <sup>6:23</sup><br><b>Shape drawn with 112° (+/-2°) angle and 5.5cm (+/-2mm) side length</b> |
| 6. 1,273 ÷ 19                                                                       | <sup>6:3</sup><br><b>67</b>      | 16. Write this decimal as a <b>fraction</b> and a <b>percentage</b> . (0.8)                 | <sup>6:12</sup><br>$\frac{4}{5}$ , 80% |                                                                                                                                                                          |                                                                                              |
| 7. Which is a <b>common multiple</b> of 22 and 33? 99 66 44 11 2                    | <sup>6:4</sup><br><b>66</b>      | 17. Find <b>65%</b> of 180.                                                                 | <sup>6:13</sup><br><b>117</b>          |                                                                                                                                                                          |                                                                                              |
| 8. Which <b>factor</b> of 25 is also a <b>prime number</b> ?                        | <sup>6:4</sup><br><b>5</b>       | 18. In a class of 20 pupils, $\frac{2}{5}$ are girls. How many boys are there?              | <sup>6:14</sup><br><b>12</b>           |                                                                                                                                                                          |                                                                                              |
| 9. 15 + 5 x 7                                                                       | <sup>6:5</sup><br><b>50</b>      | 19. How much will a 9 minute call cost? <div>Call charge: 15p +12p per minute.</div>        | <sup>6:15</sup><br><b>£1.23</b>        |                                                                                                                                                                          |                                                                                              |
| 10. I have £10. I buy 3 coffees at £1.80 each. How much do I have left?             | <sup>6:6</sup><br><b>£4.60</b>   | 20. What is the <b>10<sup>th</sup> term</b> of this sequence? 11, 14, 17, 20, 23, ...       | <sup>6:16</sup><br><b>38</b>           |                                                                                                                                                                          |                                                                                              |
| Total (A)                                                                           |                                  | Total (B)                                                                                   |                                        | Total (C)                                                                                                                                                                |                                                                                              |
| Test Total (A+B+C)                                                                  |                                  | R (0-9)                                                                                     |                                        | Y (10-19)                                                                                                                                                                | G (20-25)                                                                                    |