



W.C. 4th May

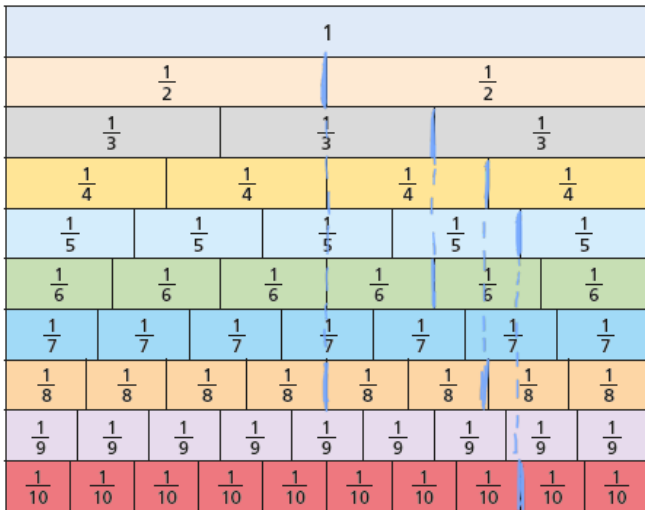
Maths Answers

Monday

Simplify fractions using knowledge of common factors

Mild

1



Use the fraction wall to write each fraction in its simplest form.

a) $\frac{4}{6} = \frac{2}{3}$

c) $\frac{6}{8} = \frac{3}{4}$

b) $\frac{8}{10} = \frac{4}{5}$

d) $\frac{4}{8} = \frac{1}{2}$

2

a) Use a fraction wall to explain why $\frac{7}{10}$ does not simplify.

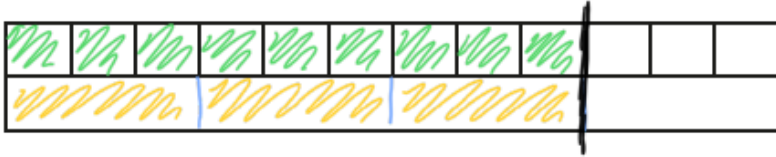
It is already in its simplest form.

b) Find three more fractions on the fraction wall that cannot be simplified.

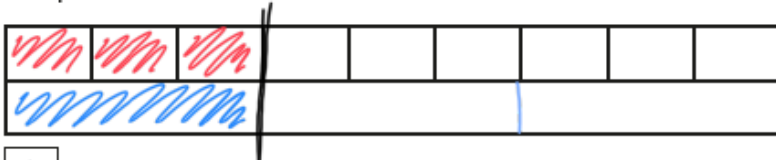
e.g. $\frac{2}{3}$ $\frac{3}{7}$ $\frac{9}{10}$

Medium

- a) Draw lines on the bar model to show that $\frac{9}{12}$ is equal to $\frac{3}{4}$



- b) Complete each bar model and calculation.



$$\frac{1}{3} = \frac{3}{9}$$



$$\frac{1}{3} = \frac{5}{15}$$

Simplify the fractions.

a) $\frac{4}{12} = \frac{1}{3}$ b) $\frac{8}{12} = \frac{2}{3}$ c) $\frac{40}{120} = \frac{1}{3}$ d) $\frac{12}{4} = 3$

$\frac{4}{16} = \frac{1}{4}$ $\frac{8}{16} = \frac{1}{2}$ $\frac{40}{160} = \frac{1}{4}$ $\frac{120}{4} = 30$

$\frac{4}{20} = \frac{1}{5}$ $\frac{8}{20} = \frac{2}{5}$ $\frac{40}{200} = \frac{1}{5}$ $\frac{12}{400} = \frac{3}{100}$

Describe and explain any patterns that you noticed.

Various answers

Spicy

1. Write 3 fractions that simplify to $\frac{3}{5}$

e.g. $\frac{6}{10}$ $\frac{9}{15}$ $\frac{12}{20}$

2. Teddy and Dora are both simplifying $\frac{30}{42}$

Teddy
 $\frac{30}{42} = \frac{15}{21} = \frac{5}{7}$

Dora
 $\frac{30}{42} = \frac{5}{7}$

- a) How do you think Dora was able to simplify the fraction in one step?
b) Simplify these fractions in one step.

$$\frac{24}{30} = \frac{4}{5} \qquad \frac{16}{20} = \frac{4}{5}$$

$$\frac{56}{64} = \frac{7}{8} \qquad \frac{99}{121} = \frac{9}{11}$$

3. $\frac{\text{star}}{\text{heart}}$ is a prime number. heart is a multiple of 10

The fraction can be simplified.

What could each number be? Explain your reasoning.

E.g. 2 is prime, 20 is a multiple of 10
and $\frac{2}{20} = \frac{1}{10}$
so star could be 2 and heart could be 20

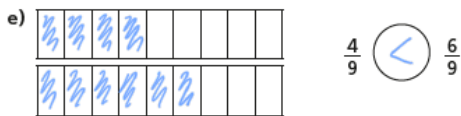
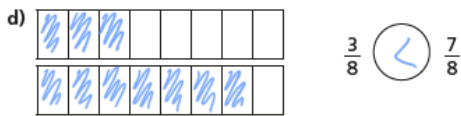
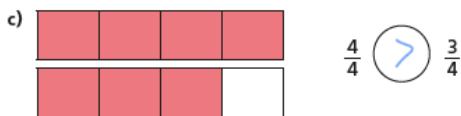
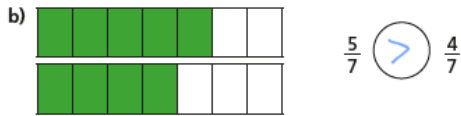
Tuesday

Compare and order fractions

Mild

1 Write $<$, $>$ or $=$ to compare the fractions.

Use the bar models to help you.



f) What do you notice about your answers?

g) Complete the sentence.

When the denominators are the same, the greater the numerator, the greater the fraction. (or smaller/smaller)

Use the bar models to sort these fractions in order from greatest to smallest.



greatest

smallest

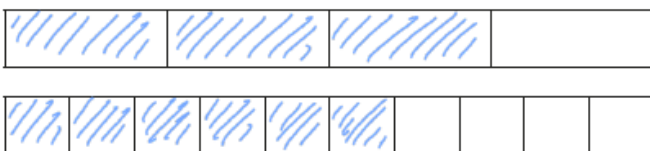
Order the fractions from smallest to greatest.



smallest

greatest

a) Colour the bar models to compare $\frac{3}{4}$ and $\frac{6}{10}$



b) Write $<$, $>$ or $=$ to complete the statement.



Medium

Amir is comparing the fractions $\frac{4}{15}$ and $\frac{3}{10}$

$$\frac{4}{15} = \frac{8}{30} \quad \frac{3}{10} = \frac{9}{30}$$
$$\frac{9}{30} \text{ is greater than } \frac{8}{30}$$
$$\frac{3}{10} \text{ is greater than } \frac{4}{15}$$

Explain Amir's method.

Amir used equivalent fractions to find a common denominator and then compared the numerators.

Ron and Rosie are practising penalties.

Ron scored 7 out of 10.

Rosie scored 23 out of 30

I scored more than you, so I should take penalties for the school team.



I did not miss as many as you, so I should take the penalties.



Compare fractions to explain who should take penalties for the school team.

$$\frac{7}{10} = \frac{21}{30} \quad \frac{23}{30} > \frac{21}{30} \quad \text{Rosie should take}$$

penalties for the school team.

Write $<$ or $>$ to compare the fractions.

a) $\frac{1}{7} > \frac{1}{9}$

d) $\frac{11}{12} < \frac{11}{11}$

b) $\frac{4}{5} > \frac{4}{7}$

e) $\frac{19}{5} > \frac{19}{6}$

c) $\frac{3}{13} < \frac{3}{8}$

f) $\frac{107}{53} < \frac{107}{40}$

Spicy

Write $<$, $>$ or $=$ to compare the fractions.

a) $\frac{3}{4} < \frac{5}{6}$

d) $\frac{3}{5} < \frac{5}{7}$

b) $\frac{2}{3} > \frac{5}{9}$

e) $\frac{9}{10} > \frac{3}{4}$

c) $\frac{2}{3} < \frac{7}{8}$

f) $\frac{9}{10} < \frac{19}{20}$

Annie, Tommy and Kim are making flags for the school fair.

Annie has completed $3\frac{3}{4}$ flags, Tommy has completed $3\frac{2}{3}$ flags
and Kim has completed $\frac{18}{5}$ flags.

Who has completed the most flags?

$$\frac{18}{5} = 3\frac{3}{5} \quad \frac{3}{4} > \frac{2}{3} > \frac{3}{5}$$

Annie has completed the most flags

Scott scored 20 out of 24 in a game.

Dani scored 5 out of 7

Compare their scores.

Explain who you think did best and why.

$$\text{Scott: } \frac{20}{24} = \frac{5}{6} \quad \frac{5}{6} > \frac{5}{7} \text{ so Scott did better.}$$

$$\text{Dani: } \frac{5}{7}$$

$\frac{2}{5} < 1\frac{1}{3}$

$\frac{2}{5} < \frac{6}{11}$

$3\frac{2}{3} > \frac{11}{4}$

$1\frac{2}{5} > 1\frac{1}{3}$

$3\frac{2}{5} < 3\frac{6}{11}$

$\frac{12}{5} < \frac{12}{3}$

$\frac{12}{5} < \frac{36}{11}$

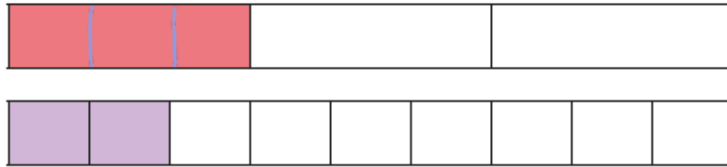
Wednesday

Add and subtract fractions

Mild

- 1 Eva is working out $\frac{1}{3} + \frac{2}{9}$

She uses two fraction strips.



Use the fraction strips to help you complete the calculations.

$$\frac{1}{3} = \frac{3}{9} \quad \frac{1}{3} + \frac{2}{9} = \frac{3}{9} + \frac{2}{9} = \frac{5}{9}$$

- 2 Complete the addition.

$$\frac{3}{10} + \frac{2}{5} = \frac{7}{10}$$



- 3 Use the bar model to complete the subtraction.

$$\frac{7}{8} - \frac{1}{4} = \frac{5}{8}$$

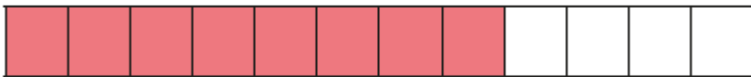


Amir is using fraction strips to work out $\frac{2}{3} + \frac{1}{4}$

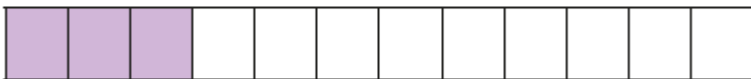


Amir says he needs to find a common denominator.

a) Complete Amir's method.



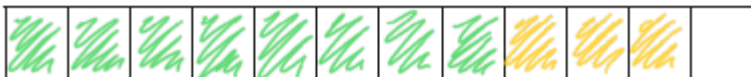
$$\frac{2}{3} = \frac{8}{12}$$



$$\frac{1}{4} = \frac{3}{12}$$

$$\frac{2}{3} + \frac{1}{4} = \frac{8}{12} + \frac{3}{12} = \frac{11}{12}$$

b) Show the addition on the fraction strip.

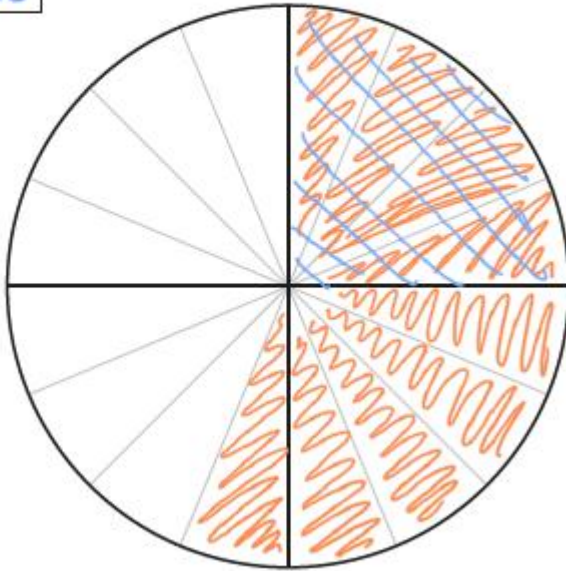


c) Could you have used a different denominator?

Medium

Use the diagram to complete the calculation.

$$\frac{9}{16} - \frac{1}{4} = \boxed{\frac{5}{16}}$$



a) $\frac{2}{5} + \frac{1}{2}$

Common denominator =

b) $\frac{2}{3} + \frac{4}{5}$

Common denominator =

c) $\frac{7}{8} - \frac{1}{4}$

Common denominator =

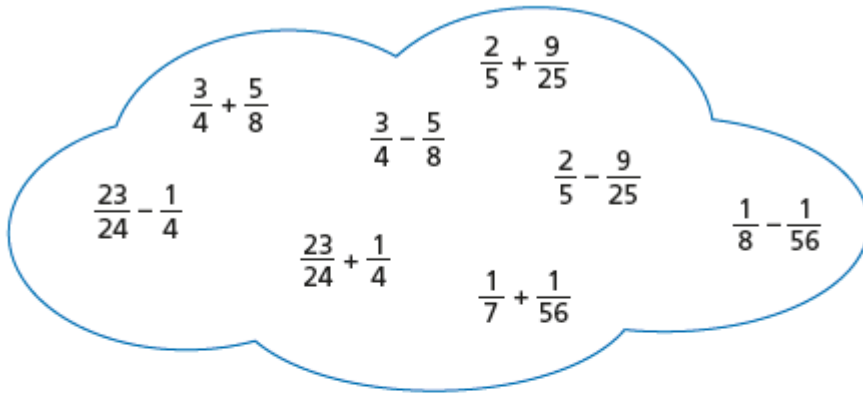
d) $\frac{7}{9} - \frac{1}{6}$

Common denominator =

e) $\frac{11}{15} + \frac{3}{10}$

Common denominator =

Sort the calculations into the correct part of the table.



Calculations with answers less than 1	Calculations with answers greater than 1
$\frac{23}{24} - \frac{1}{4}$ $\frac{3}{4} - \frac{5}{8}$ $\frac{2}{5} + \frac{9}{25}$ $\frac{2}{5} - \frac{9}{25}$ $\frac{1}{7} + \frac{1}{56}$ $\frac{1}{8} - \frac{1}{56}$	$\frac{3}{4} + \frac{5}{8}$ $\frac{23}{24} + \frac{1}{4}$

Ron and Eva are working out $\frac{1}{4} + \frac{5}{6}$

Ron's method

$$\frac{1}{4} + \frac{5}{6} = \frac{3}{12} + \frac{10}{12} = \frac{13}{12}$$

Eva's method

$$\frac{1}{4} + \frac{5}{6} = \frac{6}{24} + \frac{20}{24} = \frac{26}{24}$$

a) What is the same about Ron's and Eva's methods?

They both found a common denominator.

b) What is different about their methods?

They used a different common denominator.

c) Which method do you prefer? Why?

Spicy

Complete the calculations.

Give your answers in their simplest form.

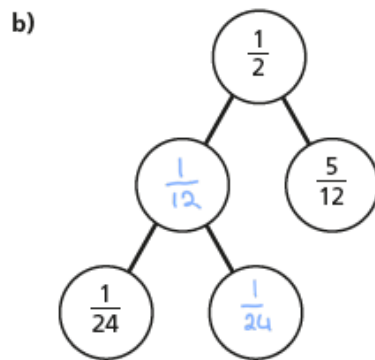
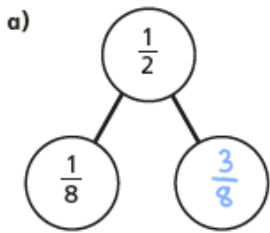
a) $\frac{9}{20} + \frac{3}{5} = \boxed{\frac{11}{20}}$

c) $\frac{2}{5} + \boxed{\frac{1}{6}} = \frac{17}{30}$

b) $\frac{9}{100} + \frac{7}{20} = \boxed{\frac{11}{25}}$

d) $\frac{17}{50} - \boxed{\frac{3}{20}} = \frac{19}{100}$

Complete the part-whole models.



A jug is filled with $\frac{9}{10}$ of a litre of juice.

$\frac{3}{50}$ of a litre of juice is poured into a glass.

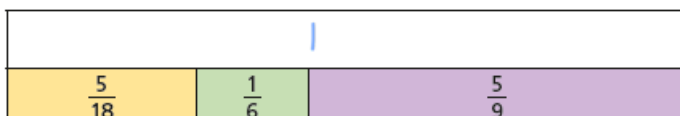
$\frac{7}{100}$ of a litre of juice is poured into another glass.

How much juice is left in the jug?

$$\frac{9}{10} = \frac{90}{100} \quad \frac{3}{50} = \frac{6}{100} \quad \frac{6}{100} + \frac{7}{100} = \frac{13}{100} \quad \frac{90}{100} - \frac{13}{100} = \frac{77}{100}$$

There is $\boxed{\frac{77}{100}}$ of a litre of juice left in the jug.

Complete the bar model.



Thursday

Adding and subtracting mixed numbers

Mild

- 1 Work out the calculations.

$$\text{a) } \frac{2}{5} + \frac{3}{4} = \boxed{1\frac{3}{20}}$$

$$\text{b) } 2\frac{1}{4} - \frac{2}{3} = \boxed{1\frac{7}{12}}$$

$$\text{c) } 3\frac{7}{10} - 2\frac{1}{4} = \boxed{1\frac{9}{20}}$$

- 2 Complete the calculation.

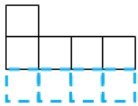

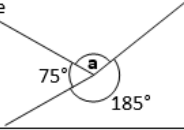


$$\frac{5}{6} + 1\frac{2}{9} - \frac{1}{2} = \boxed{1\frac{5}{9}}$$

$$\text{3a. } \frac{3}{2} + \frac{3}{4} + \frac{5}{6} = 3\frac{1}{12}, \quad \frac{14}{12} - \frac{1}{2} - \frac{1}{6} = \frac{6}{12}$$

$$\text{3b. } \frac{4}{5} + \frac{9}{10} + \frac{2}{5} = 2\frac{1}{10}, \quad \frac{13}{6} - \frac{2}{3} - \frac{2}{2} = \frac{3}{6}$$

Key Skills

Mild

A: Place Value, Add and Subtract		B: Multiply, Divide and Fractions		C: Geometry and Problem Solving	
1. Write < or > to make this correct: 129,389 <input type="text"/> 295,837	5:1 <	11. Circle all the multiples of 9. 3 <input checked="" type="checkbox"/> 18 <input checked="" type="checkbox"/> 27 <input type="checkbox"/> 34	5:8 18, 27	21. Which of these three numbers is the largest ? a. 0.4 b. 0.348 c. 0.54	5:18 c
2. Write 130,011 in words. One hundred and thirty thousand and eleven	5:1	12. The number 20 has two prime factors . What are they?	5:9 2, 5	22. This net of a cube is missing a square. Add the square. 	5:24 Square added in any position
3. Round 163,824 to the nearest hundred . 163,800	5:2	13. $5,128 \div 4$ 1,282	5:10		
4. What is the missing number? 32,475 31,475 <input type="text"/> 29,475	5:2 30,475	14. $2,050 \div 1000$	5:11 2.05(0)	23. Estimate the size of this angle: 	5:25 70° - 80°
5. Find the difference in temperatures. London -5°C Glasgow 4°C	5:3 9°C	15. Complete the sequence of square numbers . 1 4 <input type="text"/> 16	5:12 9		
6. Write this number in Roman Numerals: 1,255	5:4 MCCLV	16. Write <, = or > to make this correct: $\frac{2}{3}$ <input type="text"/> $\frac{4}{6}$	5:13 =	24. Calculate the missing angle labelled a : 	5:26 100°
7. $10,750 \div 2,925 =$	5:5 13,675	17. Find an equivalent fraction of $\frac{3}{5}$. 	5:14 $\frac{6}{10}$		
8. $8,912 - 6,495 =$	5:5 2,417	18. Write $3\frac{3}{7}$ as an improper fraction .	5:15 $\frac{24}{7}$	25. The perimeter of this square is 44cm. How long is each side? 	5:27 11cm
9. Complete this sum without written working. $9,500 + 8,500 =$	5:6 18,000	19. $2\frac{1}{3} \times 3 =$	5:16 7		
10. A train has 327 seats. 238 seats are empty. How many are on board?	5:7 89	20. Round 2.29 to the nearest whole number.	5:17 2		
Total (A)		Total (B)		Total (C)	
Test Total (A+B+C)		R (0-9)		Y (10-19) G (20-25)	

Medium

Complete the calculations.

$$\text{a) } \frac{2}{5} + \frac{1}{5} + \boxed{\frac{2}{5}} = 1$$

$$\text{b) } \frac{2}{5} + \frac{1}{5} + \boxed{\frac{9}{10}} = 1\frac{1}{2}$$

$$\text{c) } \frac{2}{5} + \frac{1}{5} + \boxed{\frac{11}{15}} = \frac{4}{3}$$

$$\text{d) } \frac{4}{5} = \boxed{1\frac{3}{5}} - \frac{4}{5}$$

Which of these are true and which are false?

Can you decide without having to do the additions or the subtractions?

Talk about your reasons with a partner.

	True or false?
$2\frac{1}{3} + 3\frac{3}{4}$ is equal to $3\frac{1}{3} + 2\frac{3}{4}$	True
$3\frac{3}{4} - \frac{1}{3}$ is less than $4\frac{3}{4} - 1\frac{1}{3}$	False
$3\frac{3}{4} - 2\frac{1}{3}$ is equal to $3\frac{1}{3} - 2\frac{3}{4}$	False

Key Skills

Medium and Spicy

Key Skills answer sheet is after the spicy work.

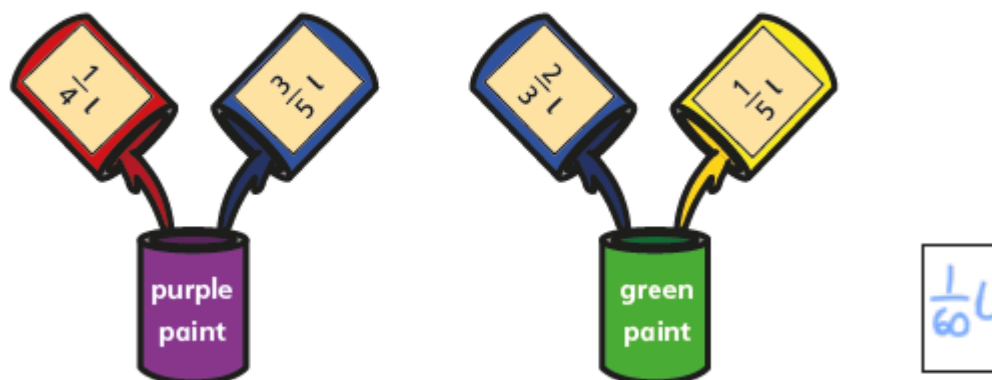
Spicy

Complete the addition grid.

$1\frac{1}{4}$	$2\frac{1}{10}$	$\frac{1}{4}$	$= 3\frac{3}{5}$
$\frac{1}{25}$	$1\frac{3}{20}$	$2\frac{1}{5}$	$= 3\frac{39}{100}$
$3\frac{2}{5}$	$1\frac{1}{50}$	$1\frac{3}{100}$	$= 5\frac{9}{20}$
$4\frac{69}{100}$	$4\frac{27}{100}$	$3\frac{12}{25}$	

A painter uses the following mixtures.

How much more green paint does she have than purple paint?



Eva and Amir are working out this calculation.

$$\frac{1}{4} + \frac{25}{100} - \frac{2}{8} - \frac{9}{36}$$



I have found an easier way.



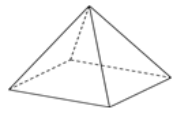

This is going to be very difficult, because I can't find a common denominator.

Find Amir's solution. Explain how this calculation can be solved.

All four fractions are equivalent to $\frac{1}{4}$ so the answer is 0

Key Skills

Medium and Spicy

A: Place Value, Add, Subtract, Multiply and Divide	B: Fractions, Ratio, Proportion and Algebra	C: Measure, Geometry and Statistics								
1. Write one million, six hundred and sixteen thousand, and ten in digits. 6:1 1,616,010	11. Which is the smallest fraction ? $\frac{1}{6}$, $\frac{3}{12}$ or $\frac{5}{24}$ 6:7 $\frac{1}{6}$	21. Calculate the area of this triangle . 3cm 18cm 6:21 27cm²								
2. What is the value of the 4 in this number? 3,954,682 6:1 4,000	12. $\frac{7}{12} + \frac{3}{8} =$ 6:8 $\frac{23}{24}$	22. Find the volume of this cuboid . 2m 5.5m 3m 6:22 33cm³								
3. Round 4.953 to 1 decimal place. 6:1 5(.0)	13. Simplify your answer. $\frac{6}{7} \times \frac{3}{8} =$ 6:9 $\frac{9}{28}$	23. Complete the information for this shape:  Faces = <input type="text" value="5"/> Edges = <input type="text" value="8"/> Vertices = <input type="text" value="5"/> 6:23 Faces:5 Edges:8 Vertices:5								
4. Write the smallest possible length. Length: 9.15cm (to 2 decimal places) 6:2 9.145	14. 8.373×100 6:10 837.3	24. Use this table to complete the pie chart to show fruits sold by a shop. <table border="1"> <thead> <tr> <th>Fruit</th> <th>No. sold</th> </tr> </thead> <tbody> <tr> <td>Apple</td> <td>15</td> </tr> <tr> <td>Banana</td> <td>25</td> </tr> <tr> <td>Orange</td> <td>10</td> </tr> </tbody> </table>  6:29 Pie chart drawn	Fruit	No. sold	Apple	15	Banana	25	Orange	10
Fruit	No. sold									
Apple	15									
Banana	25									
Orange	10									
5. $1,914 \times 33$ 6:3 63,162	15. 7.88×4 6:11 31.52									
6. Give the answer as a mixed number : $3,396 \div 16$ 6:3 212 $\frac{1}{4}$	16. Write this decimal as a fraction and a percentage . (0.75) 6:12 $\frac{3}{4}$, 75%									
7. Which is a common multiple of 9 and 15? 30 45 54 60 75 6:4 45	17. Find 55% of 520. 6:13 286									
8. Circle all the prime numbers : 61 63 64 67 6:4 61, 67	18. Share £55 in the ratio 3:2. 6:14 £33:£22									
9. $25 - (12 + 8)$ 6:5 5	19. How much will a 6 mile trip cost? Taxi charge: £3 + 35p per mile. 6:15 £5.10									
10. Give two numbers that have a difference of 7 and add to make -1. 6:6 -4, 3	20. The rule for this sequence is multiply by 3 then add 2: 1, 5, 17, <input type="text"/> 6:16 53									
Total (A)	Total (B)	Total (C)								
Test Total (A+B+C)	R (0-9)	Y (10-19) G (20-25)								

Friday

Challenge Day!