

Wednesday 13th May

Starter Problems (Answers at the end of this document)

- 1 Which of these numbers round to 2,000 to the nearest 100?

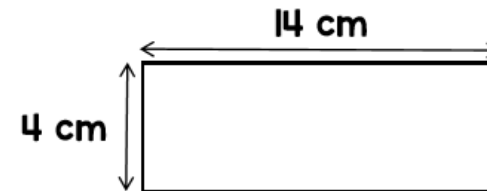
1,950 2,312 2,099 2,045

- 2 What are the missing numbers?

$$6.4 = 1 + \boxed{}$$

$$3\frac{2}{5} = 1 + \frac{\boxed{}}{5}$$

- 3 Annie has a 1 metre piece of wire. She cuts the wire into two pieces. She uses the smaller piece to make this rectangle.



She uses the other piece of wire to make a square.

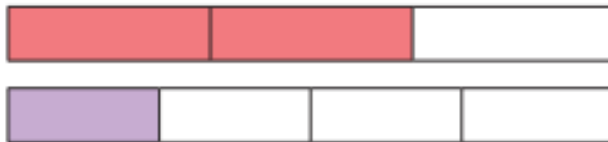
What is the length of one side of the square?



On the next page are our White Rose questions and answers. This week we are working on Fractions. Answers are included at the end, so again, if you make a mistake, can you work out why you did?

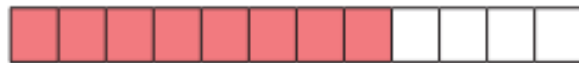
Add and subtract fractions (2)

- 1 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.



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



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

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

- b) Show the addition on the fraction strip.



- c) Could you have used a different denominator?

- 2 What common denominator can you use to add the fractions?

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 =

- 3 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?

- b) What is different about their methods?

- c) Which method do you prefer? Why?



- 4 Complete the calculations.

a) $\frac{1}{5} + \frac{3}{4} = \square$

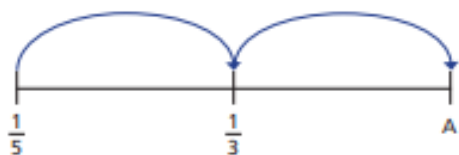
c) $\frac{1}{2} - \frac{1}{7} = \square$

b) $\frac{7}{8} - \frac{1}{3} = \square$

d) $\frac{11}{18} + \frac{7}{12} = \square$

- 5 Mo is drawing jumps on a number line.

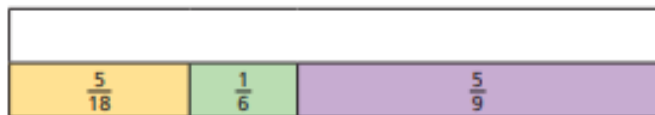
The jumps are the same size.



- a) What is the size of the jump?

- b) What is the value of A?

- 6 Complete the bar model.



- 7 Complete the additions.

Give your answers as mixed numbers and as improper fractions.

a) $\frac{4}{5} + \frac{5}{4} = \square = \square$

c) $\frac{9}{8} + \frac{8}{9} = \square = \square$

b) $\frac{2}{3} + \frac{3}{2} = \square = \square$

d) $\square = \square = \frac{5}{3} + \frac{3}{5}$

What patterns do you notice?

- 8 Look at these additions.

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

$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} = \square$

$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} = \square$

- a) When does this pattern first give an answer greater than 2?

- b) Do you think the pattern will ever give an answer greater than 100?

Answers

- 1 Which of these numbers round to 2,000 to the nearest 100?

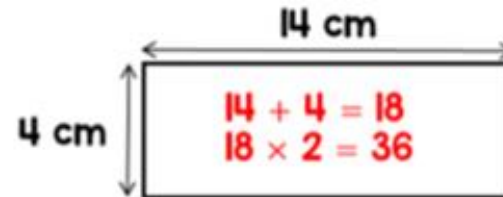
1,950 2,312 2,099 2,045

- 2 What are the missing numbers?

$$6.4 = 1 + \boxed{5.4}$$

$$3\frac{2}{5} = 1 + \frac{\boxed{12}}{5}$$

- 3 Annie has a 1 metre piece of wire. She cuts the wire into two pieces. She uses the smaller piece to make this rectangle.



She uses the other piece of wire to make a square.

What is the length of one side of the square?

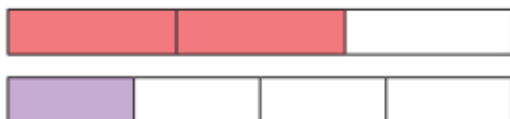
$$100 - 36 = 64$$
$$64 \div 4 = 16$$

One side of the square is 16 cm.



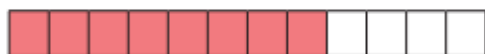
Add and subtract fractions (2)

- 1 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?

- 2 What common denominator can you use to add the fractions?

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 =

- 3 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?

- 4 Complete the calculations.

a) $\frac{1}{5} + \frac{3}{4} = \boxed{\frac{19}{20}}$

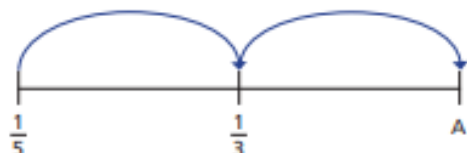
c) $\frac{1}{2} - \frac{1}{7} = \boxed{\frac{5}{14}}$

b) $\frac{7}{8} - \frac{1}{3} = \boxed{\frac{13}{24}}$

d) $\frac{11}{18} + \frac{7}{12} = \boxed{1\frac{7}{36}}$

- 5 Mo is drawing jumps on a number line.

The jumps are the same size.



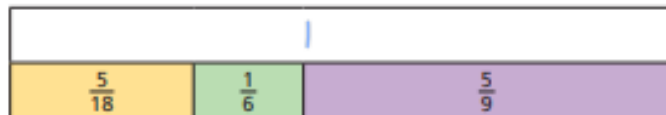
- a) What is the size of the jump?

$\boxed{\frac{2}{15}}$

- b) What is the value of A?

$\boxed{\frac{4}{5}}$

- 6 Complete the bar model.



- 7 Complete the additions.

Give your answers as mixed numbers and as improper fractions.

a) $\frac{4}{5} + \frac{5}{4} = \boxed{\frac{41}{20}} = \boxed{2\frac{1}{20}}$ c) $\frac{9}{8} + \frac{8}{9} = \boxed{\frac{145}{72}} = \boxed{2\frac{1}{72}}$

b) $\frac{2}{3} + \frac{3}{2} = \boxed{\frac{13}{6}} = \boxed{2\frac{1}{6}}$ d) $2\frac{4}{13} = \boxed{\frac{34}{13}} = \frac{5}{3} + \frac{3}{5}$

What patterns do you notice?

- 8 Look at these additions.

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

$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} = \boxed{}$

$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} = \boxed{}$

- a) When does this pattern first give an answer greater than 2?

$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8} + \frac{1}{9} + \frac{1}{10} + \frac{1}{11}$

- b) Do you think the pattern will ever give an answer greater than 100?