

Same Denominators

In this fraction addition, both the fractions have the **same denominator**.

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

To solve the calculation, the **denominator stays the same**, and the **numerators are added together**.

Same Denominators

In this fraction addition, both the fractions have the **same denominator**.

This is the same answer written as a mixed number.

$$\frac{5}{3} + \frac{6}{3} = \frac{11}{3} = 3\frac{2}{3}$$



This answer is an improper fraction. The denominator tells us the whole is made of three parts.

Same Denominators



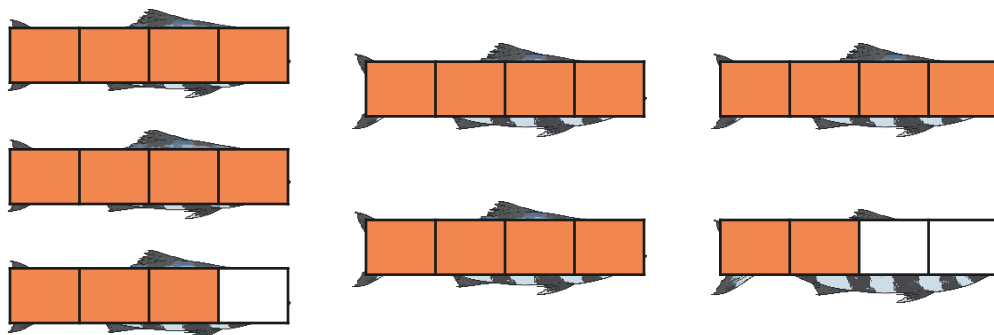
In this fraction addition, both the fractions have the **same denominator**.

This answer is an improper fraction. Change it to a mixed number.

This answer can be simplified.

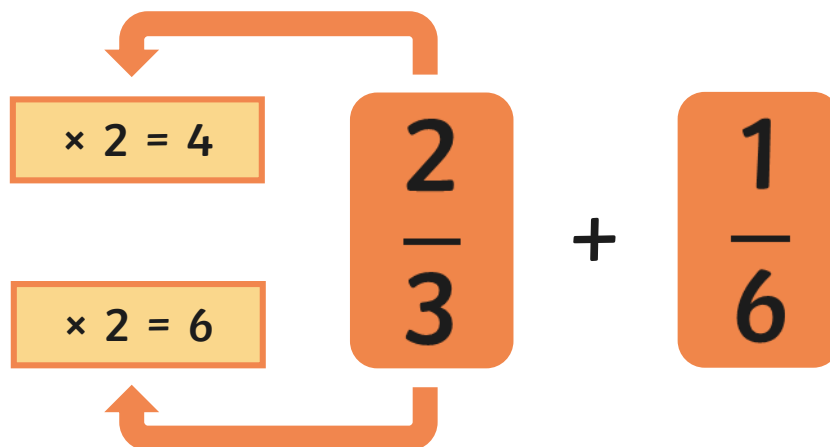
$$2\frac{11}{4} + \frac{3}{4} = \frac{14}{4} = 3\frac{1}{2}$$

This is a mixed number. Change it to an improper fraction before calculating.



Denominator Multiples

Oh no!!!!!!In this fraction addition, both the fractions have **different denominators** which are multiples of the same number.



Steps to success:

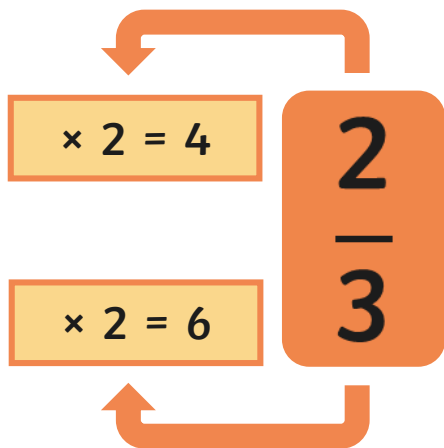
1. Write the multiples for each denominator.
2. Find out which they all have in common.
3. Create the equivalent fraction.
4. Write them in the correct order.

Do you remember the steps to creating equivalent fractions that we did to help us compare and order them?

Remember to do the same multiplication to the numerator.

Denominator Multiples

Now we have a calculation where both the denominators are the same number.



The diagram illustrates the process of finding a common denominator. On the left, the fraction $\frac{2}{3}$ is shown. To its left, two boxes are stacked: the top one contains $\times 2 = 4$ and the bottom one contains $\times 2 = 6$. An orange arrow curves from the top box to the numerator '2', and another orange arrow curves from the bottom box to the denominator '3'. This shows that both the numerator and denominator are multiplied by 2 to create an equivalent fraction $\frac{4}{6}$.

$$\frac{2}{3} + \frac{1}{6} = \frac{4}{6} + \frac{1}{6} = \frac{5}{6}$$

To solve the calculation, the **denominator stays the same**, and the **numerators are added together**.

Denominator Multiples

Let's try this with another calculation where the fractions have different denominators which are multiples of the same number.

$\times 3 = 9$
 $\frac{3}{4} + \frac{7}{12} = \frac{9}{12} + \frac{7}{12} = \frac{16}{12} = 1\frac{4}{12}$
 $\times 3 = 12$
 $= 1\frac{1}{3}$

Don't forget the steps to success:

Don't forget the steps to success:

Denominator Multiples

Let's try this with another calculation where the fractions have different denominators which are multiples of the same number.

$$\begin{array}{c} \boxed{\times 5 = 25} \\ \uparrow \\ \boxed{\frac{5}{2}} + \boxed{\frac{3}{10}} = \boxed{\frac{25}{10}} + \boxed{\frac{3}{10}} = \boxed{\frac{28}{10}} = \boxed{2\frac{4}{5}} \\ \downarrow \\ \boxed{\times 5 = 10} \end{array}$$

Now try these questions independently.
Don't forget to use the steps!

a) Complete the calculations.

$\frac{1}{5} + \frac{1}{10} =$	
$\frac{2}{5} + \frac{1}{10} =$	
$\frac{3}{5} + \frac{1}{10} =$	
$\frac{4}{5} + \frac{1}{10} =$	

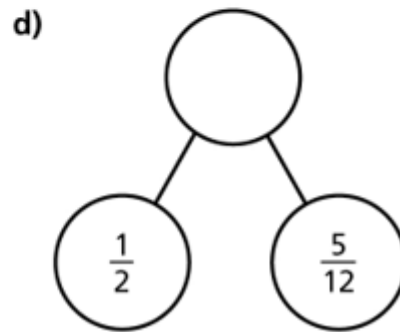
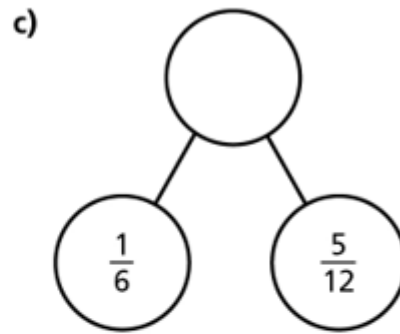
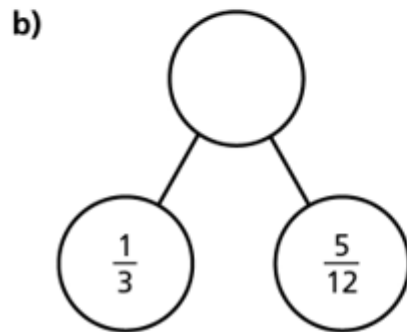
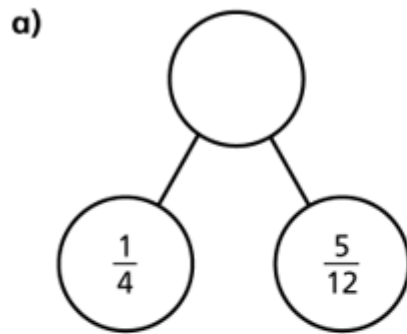
$\frac{1}{16} + \frac{5}{32} =$	
$\frac{1}{8} + \frac{5}{32} =$	
$\frac{1}{4} + \frac{5}{32} =$	
$\frac{1}{2} + \frac{5}{32} =$	

Steps to success:

1. Write the multiples for each denominator.
2. Find out which they all have in common.
3. Create the equivalent fraction.
4. Write them in the correct order.

Now let's try them in part-whole models.
Remember the top number is the **TOTAL**.

Complete the part-whole models.



Steps to success:

1. Write the multiples for each denominator.
2. Find out which they all have in common.
3. Create the equivalent fraction.
4. Write them in the correct order.

Challenge time:

Follow the same steps but with 3 fractions. Can you find the sum and answer in both an improper fraction and mixed number?

Complete the additions.

a) $\frac{1}{5} + \frac{3}{10} + \frac{7}{20} =$

b) $\frac{1}{16} + \frac{5}{32} + \frac{3}{8} =$

c) $\frac{1}{4} + \frac{5}{24} + \frac{5}{12} =$

d) $\frac{3}{16} + \frac{1}{2} + \frac{1}{4} =$

e) $\frac{1}{2} + \frac{5}{18} + \frac{1}{9} =$

f) $\frac{1}{5} + \frac{8}{35} + \frac{2}{7} =$

Same Denominators

In this fraction subtraction, both the fractions have the **same denominator**.

$$\frac{3}{5} - \frac{1}{5} = \frac{2}{5}$$

To solve the calculation, the **denominator stays the same**, and the **numerators are subtracted**.

Same Denominators

In this fraction subtraction, both the fractions have the **same denominator**.

$$\frac{10}{3} - \frac{2}{3} = \frac{8}{3} = 2\frac{2}{3}$$

1	4	7
2	5	8
3	6	

This answer is an improper fraction. Every whole is made of three parts.

This is the same answer written as a mixed number.

Denominator Multiples

In this fraction subtraction, both the fractions have **different denominators** which are multiples of the same number.

$\frac{5}{3} - \frac{7}{6}$

$\times 2 = 10$

$\times 2 = 6$

Steps to success:

1. Write the multiples for each denominator.
2. Find out which they all have in common.
3. Create the equivalent fraction.
4. Write them in the correct order.

Remember to do the same multiplication to the numerator.

Denominator Multiples

Now we have a calculation where both the denominators are the same number.

$$\times 2 = 10$$



The diagram shows the fraction $\frac{5}{3}$ with an upward arrow pointing to a box containing $\times 2 = 10$ and a downward arrow pointing to a box containing $\times 2 = 6$. This illustrates the process of finding a common denominator by multiplying both the numerator and denominator by the same number.

$$\frac{5}{3} - \frac{7}{6} = \frac{10}{6} - \frac{7}{6} = \frac{3}{6} = \frac{1}{2}$$

$$\times 2 = 6$$

To solve the calculation, the **denominator stays the same**, and the **numerators are subtracted**.

Denominator Multiples

Let's try this with another calculation where the fractions have **different denominators** which are multiples of the same number.
Don't forget the steps to success

$$\times 3 = 9$$

$$\frac{3}{4} - \frac{7}{12} = \frac{9}{12} - \frac{7}{12} = \frac{2}{12} = \frac{1}{6}$$

$$\times 3 = 12$$

Denominator Multiples

Let's try this with another calculation where the fractions have **different denominators** which are multiples of the same number.

$$\times 5 = 25$$

$$\frac{5}{2} - \frac{3}{10} = \frac{25}{10} - \frac{3}{10} = \frac{22}{10} = 2\frac{1}{5}$$

$$\times 5 = 10$$

Now use the steps to complete these subtractions.

Complete the subtractions.

a) $\frac{7}{8} - \frac{1}{16} =$

$$\frac{5}{8} - \frac{1}{16} =$$

$$\frac{3}{8} - \frac{1}{16} =$$

$$\frac{1}{8} - \frac{1}{16} =$$

b) $\frac{6}{7} - \frac{2}{21} =$

$$\frac{5}{7} - \frac{4}{21} =$$

$$\frac{4}{7} - \frac{6}{21} =$$

$$\frac{3}{7} - \frac{8}{21} =$$

Steps to success:

1. Write the multiples for each denominator.
2. Find out which they all have in common.
3. Create the equivalent fraction.
4. Write them in the correct order.

Challenge time:

Here are some fraction cards.

$$\frac{1}{3}$$

$$\frac{5}{6}$$

$$\frac{1}{2}$$

$$\frac{11}{12}$$

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

a) Which two fractions have a difference of $\frac{1}{4}$?

$$\boxed{} - \boxed{} = \frac{1}{4}$$

b) Which two fractions have a difference of $\frac{1}{2}$?

$$\boxed{} - \boxed{} = \frac{1}{2}$$

c) Which two fractions have a difference of $\frac{1}{12}$?
Give two possible pairs.

$$\boxed{} - \boxed{} = \frac{1}{12}$$

$$\boxed{} - \boxed{} = \frac{1}{12}$$