

Learning Outcome:

Students should be able to add and subtract fractions and mixed numbers

Adding and subtracting simple fractions

We can use **equivalent** fractions to add fractions that do not have the same **denominator**.

For example:

$$\frac{3}{4} + \frac{1}{8}$$

We need to change $\frac{3}{4}$ into an equivalent fraction with a denominator of 8.

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

(Diagram showing $\frac{3}{4} \xrightarrow{\times 2} \frac{6}{8}$ with arrows indicating the multiplication of both numerator and denominator by 2)

Now we have:

$$\frac{6}{8} + \frac{1}{8} = \frac{7}{8}$$

Denominator – The bottom number of a fraction.

Numerator – The top number of a fraction.

Equivalent – The same as.

Example 17

(a) $\frac{1}{2} + \frac{1}{4}$

$$\frac{\boxed{}}{\boxed{}} + \frac{1}{4}$$

(b) $3\frac{5}{6} - 1\frac{1}{6}$

$$\begin{array}{r} \boxed{} \frac{\boxed{}}{\boxed{}} \\ - \boxed{} \frac{\boxed{}}{\boxed{}} \\ \hline \boxed{} \frac{\boxed{}}{\boxed{}} \end{array}$$

REMEMBER

Please copy the step-by-step workings and answers into your notes.

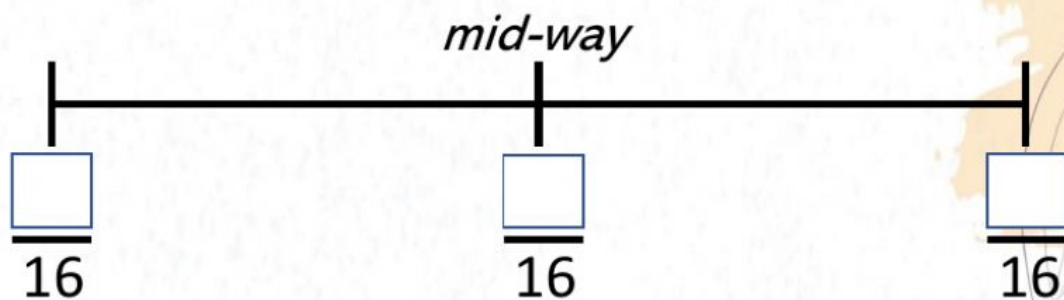
Example 18: Find the fraction which is mid-way
between $\frac{3}{8}$ and $\frac{1}{2}$

Step 1: Change the fractions into an equivalent fraction

$$\frac{3}{8} = \frac{\boxed{}}{16}$$

$$\frac{1}{2} = \frac{\boxed{}}{16}$$

Step 2: Find the mid-way



$$\text{Answer} = \frac{\boxed{}}{16}$$



**Please copy the step-by-step workings
and answers into your notes.**

Example 19:

At a pie-eating contest, Ayden got through $\frac{2}{3}$ of a pie before time was called. Malek finished just $\frac{7}{12}$ of a pie. How much more pie did Ayden eat than Malek?

Step 1: Change $\frac{2}{3}$ into an equivalent fraction with a denominator of 12

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

Step 2: Create bar model for Ayden and Malek

Click on the box to show $\frac{8}{12}$

Ayden



Start Here

Click on the box to show $\frac{7}{12}$

Malek



Start Here

Step 3:

From the bar model that you clicked in Step 2, how much more pie did Ayden eat than Malek?

Answer =

12

Please copy the step-by-step workings and answers into your notes.

Example 20:

My mother made 6 bowls of pasta. She puts extra cheese on 3 of them.



What fraction of the bowls did not have extra cheese?

Solution:

Bowls did not
have extra cheese = $\frac{\boxed{}}{\boxed{}}$ = $\frac{\boxed{}}{\boxed{}}$

Answer = $\frac{\boxed{}}{\boxed{}}$



**Please copy the step-by-step workings
and answers into your notes.**