

$$b = 10, 3b$$

$$5(b) = 55 = b?$$

# Adding Fractions

unrelated denominators

$$\frac{1}{2}, \frac{3}{17}$$

common denominator.

$$\frac{1}{4}, \frac{3}{4}$$

A fraction is in **simplest form** when the numerator and denominator have no common factors other than 1.  $\frac{2}{3}$

equivalent fractions ~~•  $\frac{1}{2} = \frac{2}{4}$  and  $\frac{3}{6}$~~

$$\frac{1}{2} \xrightarrow{\times 3} \frac{3}{6}$$

$$\frac{1 \times 2}{4 \times 2} = \frac{2}{8}$$

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

$$\frac{1}{4}, \frac{1}{3}$$

Look at the pattern in the equivalent fractions below.

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

Diagram showing the conversion of  $\frac{1}{4}$  to  $\frac{3}{12}$  by multiplying both numerator and denominator by 3. The number 3 in the denominator of the resulting fraction is boxed.

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

Diagram showing the conversion of  $\frac{1}{3}$  to  $\frac{4}{12}$  by multiplying both numerator and denominator by 4. The number 4 in the denominator of the resulting fraction is underlined.

So, to get an equivalent fraction, multiply the numerator and denominator by the same number.

$$\frac{1}{2}, \frac{1}{5}$$

$$\frac{1}{2} = \frac{5}{10}$$

Diagram showing the conversion of  $\frac{1}{2}$  to  $\frac{5}{10}$  by multiplying both numerator and denominator by 5.

$$\frac{1}{5} = \frac{2}{10}$$

Diagram showing the conversion of  $\frac{1}{5}$  to  $\frac{2}{10}$  by multiplying both numerator and denominator by 2.

We may also get equivalent fractions by dividing.

For example,  $\frac{8}{10}$  can be written:  $\frac{8 \div 2}{10 \div 2} = \frac{4}{5}$

$\frac{8}{10}$  and  $\frac{4}{5}$  are equivalent fractions.

$\frac{4}{5}$  is in simplest form.

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

$$\frac{8 \div 2}{10 \div 2} = \frac{4}{5}$$

$$\frac{3}{4}, \frac{4}{16}$$

$$\frac{4 \div 4}{16 \div 4} = \frac{1}{4}$$

Find a common denominator for each pair of fractions.

$$\frac{1}{2} \text{ and } \frac{5}{8}$$

Add:  $\frac{4}{9} + \frac{5}{6}$

Use equivalent fractions to write the fractions with a common denominator.

List the multiples of 9: 9, **18**, 27, 36, 45, ...

List the multiples of 6: 6, 12, **18**, 24, 30, 36, 42, ...

18 is a multiple of 9 and 6, so 18 is a common denominator.

36 is also in both lists.  
So, 36 is another possible  
common denominator.

$$\frac{4}{9} = \frac{8}{18}$$

The diagram shows a circular arrow from 4/9 to 8/18 labeled 'x2' at the top, and another circular arrow from 8/18 back to 4/9 labeled 'x2' at the bottom.

$$\frac{5}{6} = \frac{15}{18}$$

The diagram shows a circular arrow from 5/6 to 15/18 labeled 'x3' at the top, and another circular arrow from 15/18 back to 5/6 labeled 'x3' at the bottom.

$$\begin{aligned}\frac{4}{9} + \frac{5}{6} &= \frac{8}{18} + \frac{15}{18} \\ &= \frac{23}{18}\end{aligned}$$

Add the numerators.

Replace each  $\square$  with a digit to make each equation true.

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

Complete worksheets from yesterday, then...

Page 180, questions 2,3,4a, 5,6,7

Page 188 - questions 1,2,4,5,7,8

5- 5, 10, 15, 20, 25, 30, 35, 40

8- 8, 16, 24, 32, 40 \* Pass in booklet



NOT  
☹️

$$2 \frac{3}{6} = \frac{\square}{4}$$

$$\frac{3 \times 4}{6} = \frac{12}{24}$$

$$\frac{12}{24} = \frac{\square}{4}$$

$$\frac{2 \frac{1}{6}}{2 \frac{1}{6}} = \frac{3}{6}$$