5.3 Using Symbols to Add Fractions

Quick Review

At Home / At School

➤ To add fractions with the same denominator, add the numerators. Then write the sum of the numerators over the common denominator.

For example, $\frac{1}{12} + \frac{4}{12} = \frac{5}{12}$

➤ To add fractions with different denominators, first write them with the same denominator.

For example, to add $\frac{1}{2} + \frac{3}{5}$, estimate first.

Think: $\frac{3}{5} > \frac{1}{2}$; so, $\frac{1}{2} + \frac{3}{5} > 1$

To add $\frac{1}{2} + \frac{3}{5}$, find equivalent fractions for $\frac{1}{2}$ and $\frac{3}{5}$ with a common denominator.

The common denominator is a multiple of 2 and 5.
Multiples of 2 are: 2, 4, 6, 8, **10**, 12, 14, . . .
Multiples of 5 are: 5, **10**, 15, . . .
10 is a common multiple of 2 and 5.
So, you can use 10 as the common denominator.
Then, write the equivalent fractions for $\frac{1}{2}$ and $\frac{3}{5}$ with 10 as the denominator.
To get equivalent fractions, multiply the numerator and denominator by the same number.

$\frac{1}{2} \overset{\times 5}{=} \frac{5}{10}$ (multiply by 5 on both) $\frac{3}{5} \overset{\times 2}{=} \frac{6}{10}$ (multiply by 2 on both)

Tip
Use fraction strips to check equivalent fractions.

$$\frac{1}{2} + \frac{3}{5} = \frac{5}{10} + \frac{6}{10}$$
$$= \frac{11}{10}$$

You can write a fraction greater than 1 as a mixed number.

$$\frac{11}{10} = 1\frac{1}{10}$$

Practice

1. Write 2 equivalent fractions for each fraction.

a) $\frac{4}{5}$ $\frac{4}{5} = \frac{\times 2}{\times 2}$ $\frac{4}{5} = \frac{\quad}{\quad}$

b) $\frac{4}{6}$ $\frac{4}{6} = \frac{\quad}{\quad}$ $\frac{4}{6} = \frac{\quad}{\quad}$

2. Complete each equation to make it true.

a) $\frac{3}{4} = \frac{\quad}{12}$ b) $\frac{1}{2} = \frac{\quad}{10}$ c) $\frac{4}{6} = \frac{\quad}{3}$ d) $\frac{10}{12} = \frac{\quad}{6}$

3. Find a common denominator for each pair of fractions.

a) $\frac{1}{2}$ and $\frac{3}{4}$

The multiples of 2 are: _____

The multiples of 4 are: _____

The lowest common multiple and a common denominator is: ___

b) $\frac{2}{3}$ and $\frac{3}{5}$

The multiples of 3 are: _____

The multiples of 5 are: _____

The lowest common multiple and a common denominator is: ____

4. Add.

a) $\frac{2}{9} + \frac{1}{3}$

The multiples of 9 are: _____

The multiples of 3 are: _____

The lowest common multiple of 9 and 3 is: __

Use this as a common denominator.

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

$\frac{2}{9} + \frac{1}{3} =$ _____

$=$ __

b) $\frac{7}{10} + \frac{1}{6}$

The lowest common multiple of 10 and 6 is: _____.

$\frac{7}{10} + \frac{1}{6} =$ _____

$=$ ___

$=$ ___

5. Add. Write each sum in simplest form.

a) $\frac{5}{6} + \frac{1}{3} =$ ___ b) $\frac{2}{3} + \frac{3}{4} =$ ___ c) $\frac{3}{10} + \frac{1}{2} =$ _____

> **Tip**
> *You can write a fraction greater than 1 as a mixed number.*

6. Colin is wrapping presents.

He needs $\frac{3}{4}$ of a metre of green ribbon and $\frac{7}{8}$ of a metre of red ribbon.
How much ribbon does Colin need altogether?

_____

7. Complete this magic square so that the sum of every row, column, and diagonal is 1.
Write all fractions in simplest form.

$\frac{8}{15}$	$\frac{1}{15}$	
	$\frac{1}{3}$	

KEY TO SUCCESS

During a test or an exam, read all the questions first. Start with those questions that you know how to answer.