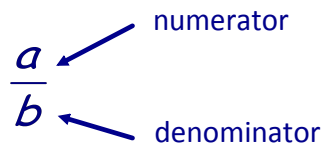


1.2 Adding & Subtracting Fractions

Recall:



Common Denominator: a common **multiple** of the denominators of two or more fractions

Example 1: Determine the common denominator of each set of fractions.

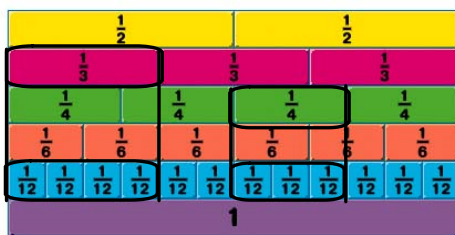
a) $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}$

b) $\frac{2}{3}, \frac{1}{4}, \frac{5}{2}$

Adding Fractions:

Example 2: $\frac{1}{3} + \frac{1}{4}$

common denominator =

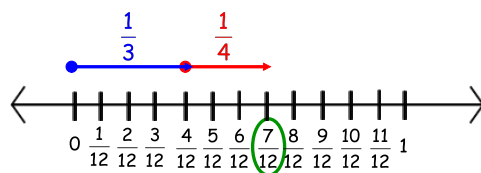


$$\frac{1}{3} + \frac{1}{4} = \dots$$

$$= \dots$$

Using a number line:

Mark the number line using the common denominator.



Example 3: Evaluate

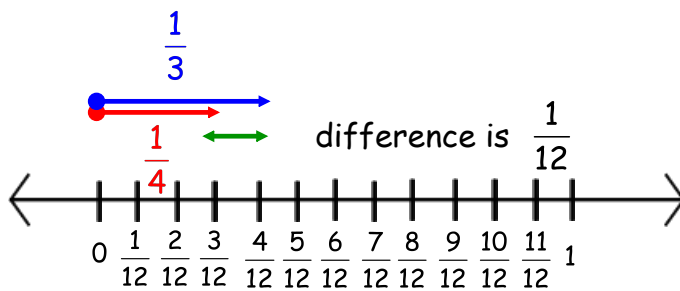
a) $\frac{3}{5} + \frac{5}{4}$

b) $\frac{4}{3} + \frac{1}{6} + \frac{5}{8}$

Subtracting Fractions:

Example 4: $\frac{1}{3} - \frac{1}{4}$

common denominator =



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

Example 5: Evaluate

a) $\frac{3}{5} - \frac{4}{3}$

b) $\frac{2}{3} - \frac{1}{6}$

c) $6 - \left(-\frac{2}{3}\right)$



Converting a mixed fraction to an improper fraction:



Example 6: $3\frac{2}{5}$

$$3\frac{2}{5} = \frac{3 \times 5 + 2}{5}$$
$$= \frac{15 + 2}{5}$$
$$= \frac{17}{5}$$

Shortcut:



Multiply the denominator by the whole part then add the numerator → this is the new numerator



$$3\frac{2}{5} = \frac{3 \times 5 + 2}{5} = \frac{17}{5}$$

Example 7: $-3\frac{2}{5}$

This is the SAME fraction, only negative!

$$\therefore -3\frac{2}{5} = \frac{-3 \times 5 - 2}{5}$$

Example 8: Evaluate

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

b) $\frac{3}{4} + 2\frac{3}{5} - \left(\frac{-7}{2}\right) - \frac{1}{10}$



1. Change Mixed Fractions to improper fractions
2. Simplify Signs
3. Common Denominator
4. Add/Subtract Numerator

b) How much longer did it rain on Wednesday than on Tuesday?

Example 9:

During one week it rained for two and a half hours on Monday, one and three quarter hours on Tuesday, and two and five sixth hours on Wednesday.

a) Find the total period of rainfall for this week.



Homework:
Handout 1.2

**3 OUT OF 2
PEOPLE
— HAVE —
TROUBLE
— WITH —
FRACTIONS**