

Chapter 4: Adding and subtracting fractions

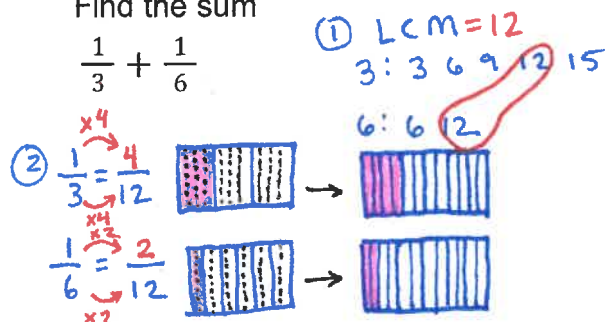
Section 4.2 - Adding and subtracting fractions with unlike denominators

Recall - Before we can add or subtract fractions we must find a common denominator

Adding fractions with unlike denominators**Example****Key Points**

Find the sum

$$\frac{1}{3} + \frac{1}{6}$$



- ① • Find a common denominator
 • Lowest Common Multiple (LCM)

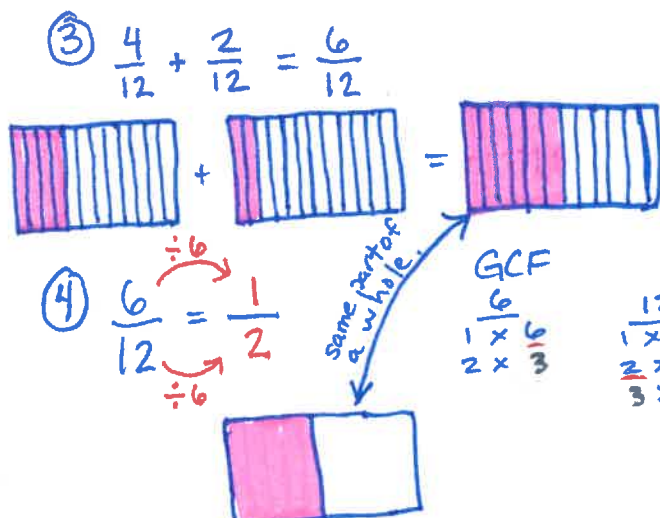
- ② • Make equivalent fractions using common denominator

- ③ • Add the numerators

- Reduce to lowest terms

↳ Find the greatest common factor (GCF)

- Divide both the numerator and denominator by the GCF



Try it out:

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

2. $\frac{2}{5} + \frac{1}{2}$

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

Answers to try it out questions
 ① $\frac{13}{12}$ or $1\frac{1}{12}$ ② $\frac{9}{10}$ ③ $\frac{47}{30}$ or $1\frac{17}{30}$

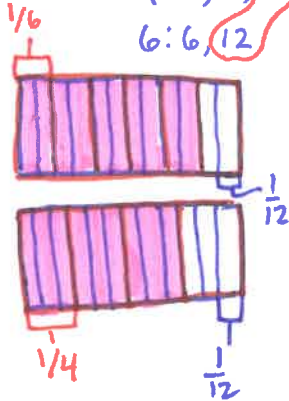
Subtracting fractions with unlike denominators**Example****Key Points**

Find the difference

$$\frac{5}{6} - \frac{3}{4}$$

① LCM
4: 4, 8, 12, 16
6: 6, 12

② $\frac{5}{6} \xrightarrow{\times 2} \frac{10}{12}$
 $\frac{3}{4} \xrightarrow{\times 3} \frac{9}{12}$



- ① • Find a common denominator
◦ Lowest Common Multiple (LCM)

- ② • Make equivalent fractions using common denominator

- ③ • Subtract the numerators

- ④ • Reduce to lowest terms
↳ Divide by GCF

③ $\frac{10}{12} - \frac{9}{12} = \frac{1}{12}$

④ $\frac{1}{12}$ This is already in lowest terms so we are done!
GCF $\frac{1}{1 \times 1}$
 $\frac{1}{12} \xrightarrow{\div 1} \frac{1}{12}$

$$\frac{12}{1 \times 12}$$

$$\frac{1}{1 \times 1}$$

Factors

$$1 \Rightarrow 1$$

$$12 \Rightarrow 1, 2, 3, 4, 6, 12$$

Try it out:

4. $\frac{1}{2} - \frac{1}{5}$

5. $\frac{3}{4} - \frac{2}{3}$

6. $\frac{4}{5} - \frac{1}{6} - \frac{1}{2}$

Practice assignment - page 113 # 1, 2, 3, 5, 6, 7, 8, 10 choose two apply (challenge #21 and 22)

Answers to "try it out" questions:
④ $\frac{10}{3}$ ⑤ $\frac{1}{12}$ ⑥ $\frac{30}{4} \rightarrow \frac{15}{2}$