

+ - + - + - + -

Adding

or

Subtracting

Fractions with

LIKE

Denominators

+ - + - + - + -

+ - + - + - + -

Adding

or

Subtracting

Fractions with

UNLIKE

Denominators

+ - + - + - + -

x • x • x • x • x

Multiplying
Fractions

x • x • x • x • x

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Dividing
Fractions

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$$\text{EX) } \frac{2}{7} + \frac{1}{7} = \frac{1+2}{7} = \boxed{\frac{3}{7}}$$

$$\text{EX) } \frac{9}{10} - \frac{3}{10} = \frac{6}{10} = \boxed{\frac{3}{5}}$$

$$\frac{a}{b} + \frac{c}{b} = \frac{a+c}{b}$$

$$\frac{a}{b} - \frac{c}{b} = \frac{a-c}{b}$$

If the denominators are already the same (**LIKE** denominators):

- Add or subtract the numerators
- Put the sum or difference over the same denominator
- Simplify, if needed

$$\text{EX) } \frac{2x^2}{5x^2} + \frac{1}{10} = \frac{4}{10} + \frac{1}{10}$$

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

$$\text{EX) } \frac{7x^2}{12x^2} - \frac{3x^3}{8x^3} = \frac{14}{24} - \frac{9}{24}$$

$$= \boxed{\frac{5}{24}}$$

If the denominators are NOT the same (**UNLIKE** denominators):

- Find a common denominator or the LCD
- Write equivalent fractions with the new denominator
- Put the sum or difference over the same denominator
- Simplify, if needed

$$\text{EX) } \frac{1}{2} \times \frac{2}{5} = \frac{2}{10} = \boxed{\frac{1}{5}}$$

$$\text{EX) } \frac{2}{3} \times \frac{9}{16} = \frac{18}{48} = \boxed{\frac{3}{8}}$$

$$\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$$

- Multiply the numerators straight across
- Multiply the denominators straight across
- Simplify, if needed
- **Note:** *If you can, try to SIMPLIFY before you MULTIPLY*

$$\text{EX) } \frac{7}{12} \div \frac{2}{3} = \frac{7}{12} \times \frac{3}{2}$$

$$\text{K C F} = \frac{21}{24} = \boxed{\frac{7}{8}}$$

$$\text{EX) } \frac{9}{20} \div \frac{3}{5} = \frac{9}{20} \times \frac{5}{3}$$

$$\text{K C F} = \frac{45}{60} = \frac{3}{4}$$

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c} = \boxed{\frac{3}{4}}$$

"Invert and Multiply"

- "Keep" the first fraction
- Write the reciprocal of the second fraction
- Multiply
- Simplify, if needed