Unit 4
Add and Subtract Fractions

Math Essentials

1

Consider...

Tom ate $\frac{1}{8}$ of a pizza. Jerry ate $\frac{3}{8}$ of a pizza. How much of the pizza did they eat together?

$$\frac{1}{8}+\frac{3}{8}=?$$

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Like Denominators

To add when denominators are the same,

a) add the numerators,

b) keep the denominator, and

c) simplify, if possible.

$$\frac{2}{6}+\frac{5}{6}=\frac{2+5}{6}=\frac{7}{6}$$

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Practice 4.1

Add

1. $\frac{1}{9}+\frac{6}{9}$
2. $\frac{1}{10}+\frac{3}{10}$

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Consider...

Tom ate $\frac{1}{2}$ of a pizza. Jerry ate $\frac{3}{8}$ of a pizza. How much of the pizza did they eat together?

$$\frac{1}{2}+\frac{3}{8}=?$$

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Different Denominators

To add when denominators are different:

a) Find the least common multiple of the denominators. That number is the least common denominator, LCD.

b) Multiply by 1, writing 1 in the form of *n*/*n* to express each fraction in an equivalent form that contains the LCD.

c) Add the numerators, keeping the same denominator.

d) Simplify, if possible.

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Practice 4.2

Add each of the following.

1. $\frac{1}{8}+\frac{3}{4}$
2. $\frac{5}{6}+\frac{2}{9}$
3. $\frac{1}{3}+\frac{3}{5}$

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Practice 4.3

Subtract each of the following.

1. $-\frac{7}{6}-\frac{8}{6}$
2. $\frac{7}{12}-\frac{5}{9}$

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Practice 4.4

Evaluate and simplify.

1. $\frac{2}{9}-\frac{1}{18}+\frac{7}{12}$
2. $\frac{4}{5}-\frac{1}{2}-\frac{3}{4}$

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Practice 4.5

Evaluate

$$5(9 - 2^3)$$

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The Order of Operations

1. Do all calculations within **grouping symbols**, including **P**arentheses, brackets, braces, and within numerators or denominators.
2. Evaluate all **Exponential** expressions.
3. Do all **Multiplication and Division** in order from left to right.
4. Do all **Addition and Subtraction** in order from left to right.

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Practice 4.6

Evaluate and simplify.

1. $\frac{7}{8} \cdot \frac{3}{5} - \frac{1}{4}$

2. $\frac{4}{9} - \frac{1}{3} \div \frac{6}{7}$

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Practice 4.7

Evaluate and simplify.

$$\frac{7}{9}+\frac{4}{7}\left(\frac{2}{3}\right)^2$$

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