

Fraction Multiplication

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

Multiply the numerators and multiply the denominators

Fraction Addition

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

Add the numerators and place the sum over the common denominator.

Fraction Division

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c}$$

Multiply the first fraction by the reciprocal of the second.

Fraction Subtraction

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

Subtract the numerators and place the difference over the common denominator.

To multiply or divide fractions, an LCD is NOT needed.
To add or subtract fractions, an LCD is needed.

Simplify:

$$\begin{matrix} (5) & 5x & - & 3 & (3) \\ (5) & 6 & - & 10 & (3) \end{matrix}$$

$$\frac{25x}{30} - \frac{9}{30} = \frac{25x-9}{30}$$

$$\left(\frac{1}{2}\right)^2 = \frac{1^2}{2^2}$$

$$\frac{\left(\frac{1}{2}\right)^2}{4+3^2} = \frac{\frac{1}{4}}{13}$$

$$\frac{1}{4} \div \frac{13}{1}$$

$$\frac{1}{4} \cdot \frac{1}{13} = \frac{1}{52}$$

$$\frac{17}{16}$$

$$\frac{1+4^2}{\left(\frac{1}{4}\right)^2} = \frac{17}{\frac{1}{16}}$$

$$17 \div \frac{1}{16}$$

$$17 \cdot 16$$

$$272$$

$$\begin{aligned} \frac{5x}{6} \cdot \frac{3}{10} &= \frac{15x}{60} = \frac{x}{4} \\ &= \frac{1}{4}x \end{aligned}$$

$$\frac{\left(\frac{1}{3}\right)^2}{2^3+2} = \frac{\frac{1}{9}}{10}$$

$$\frac{1}{9} \div \frac{10}{1}$$

$$\frac{1}{9} \cdot \frac{1}{10} = \frac{1}{90}$$

$$\begin{matrix} (2) & 1 & + & 2 & (2) \\ (5) & 2 & + & 3 & (2) \\ & 3 & - & 1 & \\ & 4 & & 6 & \end{matrix}$$

$$\frac{\frac{3}{6} + \frac{4}{6}}{\frac{9}{12} - \frac{2}{12}} = \frac{\frac{7}{6}}{\frac{7}{12}}$$

$$\frac{7}{6} \div \frac{7}{12}$$

$$\frac{7}{6} \cdot \frac{12}{7} = 2$$

$$\frac{\frac{1}{3} + \frac{1}{2}}{\frac{3}{4} - \frac{1}{3}} = \frac{\frac{2}{6} + \frac{3}{6}}{\frac{9}{12} - \frac{4}{12}} = \frac{\frac{5}{6}}{\frac{5}{12}}$$

$$\frac{5}{6} \div \frac{5}{12}$$

$$\frac{5}{6} \cdot \frac{12}{5}$$

$$2$$

$$\frac{\frac{2}{3} - \frac{1}{2}}{\frac{1}{4} + \frac{1}{3}} = \frac{\frac{4}{6} - \frac{3}{6}}{\frac{3}{12} + \frac{4}{12}} = \frac{\frac{1}{6}}{\frac{7}{12}}$$

$$\frac{1}{6} \div \frac{7}{12}$$

$$\frac{1}{6} \cdot \frac{12}{7} = \frac{2}{7}$$

Evaluate $x + \frac{1}{3}$, when

$$x = -\frac{1}{3}$$

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

$$0$$

$$x = -\frac{3}{4}$$

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

$$-\frac{9}{12} + \frac{4}{12} = -\frac{5}{12}$$

Evaluate $x + \frac{3}{4}$, when

$$x = -\frac{7}{4}$$

$$-\frac{7}{4} + \frac{3}{4}$$

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

$$x = -\frac{5}{4}$$

$$-\frac{5}{4} + \frac{3}{4} = -\frac{2}{4} = -\frac{1}{2}$$

Evaluate $x + \frac{1}{2}$, when

$$x = \frac{2}{3}$$

$$x = -\frac{3}{4}$$

Evaluate $-\frac{5}{6} - y$, when

$$y = -\frac{2}{3}$$

Evaluate: $2x^2y$ when $x = \frac{1}{4}$ and $y = -\frac{2}{3}$

$$2\left(\frac{1}{4}\right)^2\left(-\frac{2}{3}\right)$$
$$2\left(\frac{1}{16}\right)\left(-\frac{2}{3}\right) = \left(\frac{1}{8}\right)\left(-\frac{2}{3}\right) = -\frac{1}{12}$$

Evaluate $4c^3d$ when $c = -\frac{1}{2}$ and $d = -\frac{4}{3}$

$$4\left(-\frac{1}{2}\right)^3\left(-\frac{4}{3}\right)$$
$$4\left(-\frac{1}{8}\right)\left(-\frac{4}{3}\right) = \left(-\frac{1}{2}\right)\left(-\frac{4}{3}\right) = \frac{2}{3}$$

Evaluate $\frac{p+q}{r}$ when $p = -4$, $q = -2$, and $r = 8$.

$$\frac{-4 + (-2)}{8} = \frac{-6}{8} = -\frac{3}{4}$$

What you will learn about:
Decimals

Name and Write Decimals

Place Value											
Hundred thousands	Ten thousands	Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths	Hundred-thousandths

Name the decimal 4.3.

four and three tenths

Name the decimal 5.8.

five and eight tenths

Name the decimal: -15.571 and -13.461

negative fifteen and five hundred seventy-one thousandths

Writing Decimals

Word "and"
Locates decimal

Write "fourteen and twenty-four thousands" as a decimal.

14.024

Write as a decimal: thirteen and sixty-eight thousandths.

13.068

Rounding Decimals

↓
Round 18.379 to the nearest hundredth.

18.38

↓
Round 1.056 to the nearest tenth.

1.1

↓ ↓
Round 18.3796 to the nearest

Thousandths

18.38

Tenths

18.4

Whole Number

18

↓ ↓
Round 3,270.0783 to the nearest

Hundred

3,300

Hundredths

3,270.08

Tenths

3,270.1

Adding and Subtracting
Decimals

Add: $23.5 + 41.38$

$$\begin{array}{r} 23.50 \\ (+) 41.38 \\ \hline 64.88 \end{array}$$

Add: $5.123 + 18.47$

$$\begin{array}{r} 5.123 \\ (+) 18.470 \\ \hline 23.593 \end{array}$$

Subtract: $20 - 14.65$

$$\begin{array}{r} 20.00 \\ (-) 14.65 \\ \hline 5.35 \end{array}$$

Subtract: $50 - 37.42$

$$\begin{array}{r} 50.00 \\ (-) 37.42 \\ \hline 12.58 \end{array}$$

Multiply and Divide Decimals

$(-3.9)(4.075)$

$$\begin{array}{r} 2 1 \\ 6 4 \\ 4075 \\ (+) 39 \\ \hline 136675 \\ 122250 \\ \hline -158925 \end{array}$$

-15.8925

	<p>Multiply: $(-4.5)(6.107)$</p> $ \begin{array}{r} 6107 \\ \underline{45} \\ 30535 \\ 244280 \\ \hline 274815 \end{array} $ <p style="text-align: right;">-27.4815</p> <p>Multiply: $-10.79(8.12)$</p> $ \begin{array}{r} 67 \\ 1079 \\ \underline{812} \\ 2158 \\ 10790 \\ 863200 \\ \hline 876148 \end{array} $ <p style="text-align: right;">-87.6148</p>						
<p>Multiplying by a power of ten</p>	<p>Multiply 5.63 by</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%; text-align: center;">10</td> <td style="width: 33%; text-align: center;">100</td> <td style="width: 33%; text-align: center;">1,000</td> </tr> <tr> <td style="text-align: center;">56.3</td> <td style="text-align: center;">563</td> <td style="text-align: center;">$5,630$</td> </tr> </table> <p>Dividing Decimals</p> <p>Divide: $-25.56 \div (-0.06)$</p> $ \begin{array}{r} 426. \\ \hline 0.06 \overline{)25.56} \\ \underline{6} \\ 15 \\ \underline{12} \\ 36 \\ \underline{36} \\ 0 \end{array} $ <p style="text-align: right; margin-right: 50px;">426</p>	10	100	1,000	56.3	563	$5,630$
10	100	1,000					
56.3	563	$5,630$					

Converting Decimals, Fractions,
And Percent's

$$\begin{array}{r} 187 \\ 2 \overline{) 374} \\ \underline{2} \\ 17 \\ \underline{16} \\ 14 \end{array}$$

Divide: $-23.492 \div (-0.04)$

$$587.3$$

$$0.04 \overline{) 23.492}$$

$$\begin{array}{r} 587.3 \\ \underline{20} \\ 34 \\ \underline{32} \\ 29 \\ \underline{28} \\ 12 \end{array}$$

Divide $\$3.99 \div 24$.

$$2 \overline{) 3.99000}$$

$$\begin{array}{r} .16625 \\ 24 \overline{) 3.99000} \\ \underline{24} \\ 159 \\ \underline{144} \\ 150 \\ \underline{144} \\ 60 \\ \underline{48} \\ 120 \end{array}$$

$$\begin{array}{r} 2 \\ 24 \overline{) 3} \\ \underline{48} \\ 5 \end{array}$$

Write 0.374 as a fraction.

$$\frac{374}{1000} = \frac{187}{500}$$

$$\begin{array}{r} 60 \\ 48 \overline{) 120} \\ \underline{48} \\ 72 \\ \underline{72} \\ 0 \end{array}$$

Write 0.234 as a fraction.

$$\frac{234}{1000} = \frac{117}{500}$$

Write 0.024 as a fraction.

$$\frac{24}{1000} = \frac{6}{250} = \frac{3}{125}$$