Add:

$\frac{7}{12}+\frac{5}{18}$ $\frac{7}{12}+\frac{11}{15}$ $\frac{13}{15}+\frac{17}{20}$

HOW TO

Add or Subtract Fractions.

Step 1. Do they have a common denominator?

- Yes—go to step 2.
- No—rewrite each fraction with the LCD (least common denominator). Find the LCD. Change each fraction into an equivalent fraction with the LCD as its denominator.

Step 2. Add or subtract the fractions.
Step 3. Simplify, if possible.

Subtract:

$\frac{7}{15}-\frac{19}{24}$ $\frac{13}{24}-\frac{17}{32}$ $\frac{21}{32}-\frac{9}{28}$

Add:

1. $\frac{3}{5}+\frac{x}{8}\cdot\frac{5}{5}$
2. $\frac{24}{40}+\frac{5x}{40}$
3. $\frac{y}{6}+\frac{7}{9}\cdot\frac{2}{2}$
4. $\frac{3y}{18}+\frac{14}{18}$
5. $\frac{x}{6}+\frac{7}{15}\cdot\frac{2}{2}$
6. $\frac{5x}{30}+\frac{14}{30}$

$\frac{5x+24}{40}$ $\frac{3y+14}{18}$ $\frac{5x+14}{30}$

Fraction Multiplication	Fraction Division
$\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$	$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c}$
Multiply the numerators and multiply the denominators	Multiply the first fraction by the reciprocal of the second.
Fraction Addition	**Fraction Subtraction**
$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$	$\frac{a}{c} - \frac{b}{c} = \frac{a-b}{c}$
Add the numerators and place the sum over the common denominator.	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:

$\frac{5x}{6} - \frac{3}{10} = \frac{25x-9}{30}$

$\frac{5x}{6} \cdot \frac{3}{10} = \frac{15x}{60} = \frac{x}{4}$

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

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

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

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

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

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

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

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

$17 \cdot 16$

272

$\frac{\frac{1}{2}+\frac{2}{3}}{\frac{3}{4}-\frac{1}{6}} = \frac{\frac{3}{6}+\frac{4}{6}=\frac{7}{6}}{\frac{9}{12}-\frac{2}{12}=\frac{7}{12}}$

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

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

$= 2$

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

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

$\frac{5}{6} \cdot \frac{12}{5} = 2$

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

$\frac{3}{12}+\frac{4}{12} = \frac{7}{12}$

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

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

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

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

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

$\frac{4}{6} + \frac{3}{6} = \frac{7}{6}$

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

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

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

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

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

$-\frac{5}{6} - \left(-\frac{2}{3}\right)$

$-\frac{5}{6} - \left(-\frac{4}{6}\right) = -\frac{1}{6}$

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

$2 + \frac{1}{16} = 2\frac{1}{16}$

$\frac{2}{1}\left(\frac{1}{16}\right) = \frac{2}{16}$

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

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

$2\left(\frac{1}{16}\right)\left(-\frac{2}{3}\right) = \frac{2}{1}\left(\frac{1}{16}\right)\left(-\frac{2}{3}\right) = \frac{-4}{48} = -\frac{1}{12}$

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

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

$4\left(-\frac{1}{8}\right)\left(-\frac{4}{3}\right) = \frac{4}{1}\left(-\frac{1}{8}\right)\left(-\frac{4}{3}\right) = \frac{16}{24} = \frac{2}{3}$

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

571

Name the decimal: -15.571 and -13.461

negative fifteen and five hundred seventy-one thousandths

negative thirteen and four hundred sixty-one thousandths

Writing Decimals	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 hunredth. 18.380 Round 1.056 to the nears tenth. 1.1 Round 18.3796 the the nearest Thousandths: 18.38 Tenths: 18.4 Whole Number: 18 Round 3,270.0783 to the nearest Hundred: 3300 Hundredths: 3270.08 Tenths: 3,270.1

Adding and Subtracting Decimals • Rewrite #s so that Decimals line up Vertically • Use zeros as place holders where needed. • Add or subtract • Bring Decimal Down	Add: 23.5 + 41.38	$\begin{array}{r} 23.50 \\ +\ 41.38 \\ \hline 64.88 \end{array}$
	Add: 5.123 + 18.47	$\begin{array}{r} {\scriptstyle 1}\ 5.123 \\ +\ 18.470 \\ \hline 23.593 \end{array}$
	Subtract: 20 – 14.65	$\begin{array}{r} {\scriptstyle 1}\not{2}{\scriptstyle 9}\not{0}{\scriptstyle 9}.\not{0}\not{0} \\ -\ 14.65 \\ \hline 5.35 \end{array}$
	Subtract: 50 – 37.42	$\begin{array}{r} {\scriptstyle 4}\not{5}{\scriptstyle 9}\not{0}{\scriptstyle 9}.\not{0}{\scriptstyle 1}0 \\ -\ 37.42 \\ \hline 12.58 \end{array}$
Multiply and Divide Decimals	(-3.9)(4.075)	$\begin{array}{r} {\scriptstyle 2\ 1} \\ {\scriptstyle 6\ 4} \\ 4075 \\ \times\ ,\ 39 \\ \hline 36675 \\ 122250 \\ \hline -\ 15.8925 \end{array}$

	Multiply: (-4.5)(6.107)
	Multiply: -10.79(8.12)
Multiplying by a power of ten	Multiply 5.63 by 10 100 1,000
Dividing Decimals	Divide: $-25.56 \div (-0.06)$