

Review Topic 2: Fractional Conversions

We have many ways to say the same amount. The form depends on how you are using the number.

To **reduce** fractions divide the **numerator** (top) and the **denominator** (bottom) number by the same number.

$$\frac{45 \div 5}{100 \div 5} = \frac{9}{20}$$

To **raise** a fraction multiply the numerator and denominator by the same number.

Raise $\frac{2}{3}$ to 15^{ths} . $\frac{2 \times 5}{3 \times 5} = \frac{10}{15}$

Practice: Reduce the following.

a) $\frac{24}{56} =$	$\frac{36}{48} =$	$\frac{25}{50} =$
b) $\frac{14}{21} =$	$\frac{150}{750} =$	$\frac{72}{144} =$
c) $\frac{18}{24} =$	$\frac{16}{144} =$	$\frac{34}{51} =$
d) $\frac{121}{132} =$	$3 \frac{2}{4} =$ Keep the whole number. Reduce the fraction.	$2 \frac{8}{12}$

- | | | | | |
|-------------------------|-----------------------|-------------------------|-----------------------|---------------------|
| e) $12 \frac{42}{56} =$ | $1 \frac{7}{28} =$ | $2 \frac{90}{135} =$ | $8 \frac{8}{64} =$ | $1 \frac{10}{15} =$ |
| f) $5 \frac{25}{35} =$ | $\frac{6}{8} =$ | $4 \frac{12}{16} =$ | $\frac{14}{21} =$ | $\frac{81}{90} =$ |
| g) $3 \frac{24}{72} =$ | $5 \frac{2}{8} =$ | $\frac{21}{28} =$ | $1 \frac{9}{54} =$ | $8 \frac{45}{60} =$ |
| h) $5 \frac{5}{10} =$ | $1 \frac{56}{144} =$ | $\frac{100}{1000} =$ | $\frac{24}{56} =$ | $\frac{72}{81} =$ |
| i) $\frac{180}{240} =$ | $\frac{1080}{1215} =$ | $\frac{432}{720} =$ | $\frac{567}{1008} =$ | $\frac{150}{270} =$ |
| j) $\frac{200}{300} =$ | $\frac{230}{340} =$ | $\frac{12000}{24000} =$ | $\frac{4800}{5600} =$ | $\frac{320}{480} =$ |

Practice: Raise the following to the indicated denominator.

- | | | | | |
|-------------------------------------------|---------------------------------------|---------------------------------------|--------------------------------------|-------------------------------------|
| k) $\frac{2}{3}$ to 12^{ths} | $\frac{1}{2}$ to 12^{ths} | $\frac{1}{4}$ to 12^{ths} | $\frac{3}{4}$ to 12^{ths} | $\frac{2}{5}$ to 10^{ths} |
| l) $\frac{3}{5}$ to 35^{ths} | $\frac{2}{3}$ to 24^{ths} | $\frac{3}{8}$ to 24^{ths} | $\frac{5}{12}$ to 24^{ths} | $\frac{1}{2}$ to 24^{ths} |
| m) $\frac{5}{6}$ to 12^{ths} | $\frac{5}{6}$ to 24^{ths} | $\frac{5}{6}$ to 30^{ths} | $\frac{5}{6}$ to 18^{ths} | $\frac{5}{6}$ to 48^{ths} |
| n) $\frac{5}{12}$ to 24^{ths} | $\frac{7}{12}$ to 36^{ths} | $\frac{7}{12}$ to 48^{ths} | $\frac{1}{2}$ to 48^{ths} | $\frac{3}{4}$ to 48^{ths} |
| o) $3 \frac{2}{5}$ to 10^{ths} | $\frac{3}{8}$ to 56^{ths} | $\frac{3}{8}$ to 144^{ths} | $\frac{3}{8}$ to 16^{ths} | $\frac{3}{8}$ to 24^{ths} |
| p) $7 \frac{1}{10}$ to 100^{ths} | $5 \frac{2}{3}$ to 144^{ths} | $1 \frac{8}{15}$ to 45^{ths} | $\frac{2}{25}$ to 100^{ths} | $\frac{5}{7}$ to 105^{ths} |

Fraction to Decimal

Remember the fraction bar means divide. To change $5\frac{3}{4}$ to a decimal, save the whole number "5" and

work only with the $\frac{3}{4}$. Divide 3 by 4. $4 \overline{)3.00}^{0.75}$ Then put the five back in position. $5\frac{3}{4} = 5.75$.

Practice: Change the following to decimal numbers. Round to the thousandths place.

- | | | |
|-------------------|----------------|-----------------|
| a) $\frac{2}{3}$ | $4\frac{1}{8}$ | $\frac{5}{4}$ |
| b) $\frac{3}{4}$ | $\frac{1}{2}$ | $3\frac{3}{8}$ |
| c) $\frac{1}{3}$ | $\frac{2}{5}$ | $2\frac{3}{10}$ |
| d) $\frac{5}{12}$ | $\frac{3}{16}$ | $\frac{2}{7}$ |
| e) $\frac{1}{4}$ | $5\frac{5}{8}$ | $\frac{7}{8}$ |
| f) $\frac{4}{3}$ | $\frac{3}{5}$ | $\frac{9}{8}$ |
| g) $\frac{3}{25}$ | $\frac{6}{7}$ | $\frac{4}{5}$ |

Decimal to Fraction

Read the number. Then write the number using the place value and reduce.

Example: 3.45 Save the 3. Read .45 as forty-five hundredths. Write $\frac{45}{100}$. Reduce to $\frac{9}{20}$.

The result is $3\frac{9}{20}$.

Practice: Change the following to fraction numbers.

- | | | |
|-----------|--------|-------|
| a) 0.4 | 2.01 | 3.75 |
| b) 3.05 | 0.25 | 7.8 |
| c) 0.3 | 4.1 | 8.005 |
| d) 0.92 | 2.025 | 0.375 |
| e) 1.0012 | 3.375 | 25.25 |
| f) 0.875 | 0.625 | 0.3 |
| g) 2.005 | 1.0002 | 5.02 |

Percent -- Cent means 100. Per is divide or out of. PerCent - how many out of 100.

40% as a decimal number is
 $40 \div 100 = 0.40 = 0.4$

Percent to Decimal or Fraction

To change a percent to either a decimal or fraction, divide by 100.

35% as a fraction is
 $\frac{35}{1} \div \frac{100}{1} = \frac{35}{1} \times \frac{1}{100} = \frac{7}{20}$

If a decimal is required, use decimal division.

If a fraction is required use fraction division.

Practice: Change the following to decimal numbers.

- | | | | |
|-----------|-------|-------|-----------------|
| a) 20% | 15% | 25% | 34% |
| b) 7% | 5% | 8% | 3% |
| c) 0.5% | 0.2% | 0.3% | 0.75% |
| d) 120% | 350% | 415% | 100% |
| e) 0.02% | 0.05% | 1.25% | 0.125% |
| f) 0.008% | 2.5% | 0.4% | $\frac{3}{4}\%$ |

Practice: Change the following to fraction numbers.

- | | | | |
|-----------|-------|-------------------|-----------------|
| g) 20% | 15% | 25% | 34% |
| h) 7% | 5% | 8% | 3% |
| i) 0.5% | 0.2% | 0.3% | 0.75% |
| j) 120% | 350% | 415% | 100% |
| k) 0.02% | 1/20% | 1 $\frac{1}{4}$ % | 0.125% |
| l) 0.008% | 2.5% | 0.4% | $\frac{3}{4}\%$ |

2.3 as a percent is
 $2.3 \times 100 = 230\%$

Decimal or Fraction to Percent

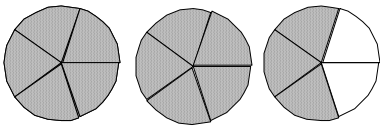
To change either a decimal or fraction to a percent, multiply by 100.

$\frac{2}{3}$ as a percent is
 $\frac{2}{3} \times \frac{100}{1} = \frac{200}{3} = 66\frac{2}{3}\%$

If a decimal is given, use decimal multiplication. If a fraction is given, use fraction multiplication.

Practice: Change the following to percent numbers.

- | | | | |
|-------------------|----------------|-----------------|----------------|
| a) 0.41 | 0.21 | 0.51 | 0.25 |
| b) 0.4 | 2.01 | 3.75 | 0.08 |
| c) 3.05 | 0.25 | 7.8 | 0.35 |
| d) 0.3 | 4.1 | 8.005 | 0.72 |
| e) 0.92 | 2.025 | 0.375 | 0.234 |
| f) $\frac{2}{3}$ | $4\frac{1}{8}$ | $\frac{5}{4}$ | $\frac{4}{5}$ |
| g) $\frac{3}{4}$ | $\frac{1}{2}$ | $3\frac{3}{8}$ | $\frac{6}{7}$ |
| h) $\frac{1}{3}$ | $\frac{2}{5}$ | $2\frac{3}{10}$ | $\frac{3}{25}$ |
| i) $\frac{5}{12}$ | $\frac{3}{16}$ | $\frac{2}{7}$ | $\frac{9}{8}$ |
| j) $\frac{1}{4}$ | $5\frac{5}{8}$ | $\frac{7}{8}$ | $\frac{3}{5}$ |



The shaded area is $2\frac{3}{5}$.

It is also $13/5$.

Think about how you would solve the following problem: I have 135 pencils in boxes that hold 12 each. How many full boxes and how many in the part box?

Improper to Mixed

$135/12$ is an improper fraction.

The numerator is larger or equal to the denominator.

Divide to change it to a mixed number.

$$12 \overline{)135} R3 \text{ yields } 11\frac{3}{12} = 11\frac{1}{4}$$

The fraction bar means divide.

Think about how you would solve the following problem: I have 5 crates of apples and one crate with 7 apples left. Each full crate holds 30 apples. How many apples in all?

Mixed to Improper

Multiply the whole number by the denominator, then add the numerator. This is the new numerator. The denominator remains the same.

$$5\frac{7}{30} = \frac{5 \times 30 + 7}{30} = \frac{157}{30}$$

Practice: Change the following to mixed numbers. Reduce as necessary.

- | | | | | |
|--------------------|-------------------|------------------|------------------|-----------------|
| a) $\frac{51}{3}$ | $\frac{4}{1}$ | $\frac{52}{3}$ | $\frac{14}{3}$ | $\frac{14}{5}$ |
| b) $\frac{14}{8}$ | $\frac{28}{5}$ | $\frac{29}{8}$ | $\frac{53}{5}$ | $\frac{32}{3}$ |
| c) $\frac{72}{12}$ | $\frac{41}{8}$ | $\frac{56}{12}$ | $\frac{17}{15}$ | $\frac{3}{2}$ |
| d) $\frac{9}{2}$ | $\frac{12}{8}$ | $\frac{634}{12}$ | $\frac{523}{5}$ | $\frac{27}{3}$ |
| e) $\frac{45}{2}$ | $\frac{45}{8}$ | $\frac{63}{12}$ | $\frac{523}{15}$ | $\frac{207}{3}$ |
| f) $\frac{78}{2}$ | $\frac{1002}{81}$ | $\frac{634}{12}$ | $\frac{553}{24}$ | $\frac{27}{13}$ |
| g) $\frac{91}{3}$ | $\frac{188}{5}$ | $\frac{934}{21}$ | $\frac{93}{4}$ | $\frac{87}{4}$ |

Practice: Change the following to improper fractions.

- | | | | | |
|--------------------|-----------------|-----------------|-----------------|------------------|
| h) $1\frac{1}{2}$ | $2\frac{2}{3}$ | $8\frac{3}{4}$ | $5\frac{4}{5}$ | $1\frac{1}{5}$ |
| i) $10\frac{2}{3}$ | $4\frac{2}{5}$ | $3\frac{1}{8}$ | $2\frac{3}{8}$ | $21\frac{1}{3}$ |
| j) $3\frac{2}{5}$ | $7\frac{1}{8}$ | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $100\frac{2}{3}$ |
| k) $3\frac{1}{5}$ | $65\frac{2}{7}$ | $6\frac{7}{8}$ | $7\frac{1}{4}$ | $8\frac{4}{5}$ |
| l) $33\frac{1}{3}$ | $66\frac{2}{3}$ | $16\frac{2}{3}$ | $37\frac{1}{2}$ | $5\frac{4}{9}$ |
| m) $6\frac{1}{8}$ | $4\frac{3}{8}$ | $10\frac{5}{8}$ | $2\frac{7}{15}$ | $1\frac{4}{7}$ |

Practice: Fill in the table by completing the conversions.

	Percent	Decimal	Fraction	
a)	15%			
b)		0.8		
c)	16 $\frac{2}{3}$ %			
d)			$\frac{2}{3}$	
e)		0.35		
f)			$\frac{3}{8}$	
g)			Mixed	Improper
h)				$\frac{15}{4}$
i)			$1\frac{1}{6}$	
j)	235%			
k)		5.1		
l)			8	
m)	436.5%			