

Math 8 8.2 Fractions, decimals & Percents  
Pg 266 - 273

Focus : I can :  
express and make connections among representations  
of %, fractions and decimals, including  
% less than 1 and greater than 100.

Example 1 Convert Percents to Decimals & Fractions

\* remember, percent means per 100 or hundredths.  
4% =  $\frac{4}{100}$  = 0.04  
17% =  $\frac{17}{100}$  = 0.17

Express 160% as a

decimal

To change to a decimal  
take your % & ÷ by 100

$160\% \div 100 = \underline{1.6}$   
answer

fraction

A percent is ~~also~~ just  
a number represented  
out of 100

$160\% = \frac{160 \div 10}{100 \div 10} = \frac{16}{10} = \frac{8}{5}$

↑  
lowest terms.

Express 0.45% as a

decimal

$0.45\% \div 100 = \underline{0.0045}$

more decimal  
over 2 spots  
\* trick

Fraction

$0.45\% = \frac{0.45 \times 100}{100 \times 100}$

$= \frac{45}{10000} \div 5 = \frac{9}{2000}$

lowest terms

Don't want  
decimal in  
fraction



12.6% as a decimal & fraction

Decimal  
 $12.6\% \div \underline{100} = 0.126$   
 ↑  
 Move 2  
 decimal places  
 left

Fraction  
 $12.6\% = \frac{12.6 \times 10}{100 \times 10} = \frac{126}{1000} \xrightarrow{\div 2} \frac{63}{500}$   
 ↑  
 reduce

### Example 2 Convert Decimals to Percents and Fractions

Express each number as a percent & fraction

a) 3.26

percent

When we went from a %  
 to a decimal we  $\div 100$   
 we will do the opposite  
 when changing a decimal  
 to %.

$3.26 \times 100\% = 326\%$   
 or move decimal over 2  
 to the right

$326\% \rightarrow 326\%$

Fraction

We want to get rid of  
 the decimal so we keep  
 $\times 10$  until we get rid  
 then lowest terms

$\frac{3.26 \times 10}{1 \times 10} = \frac{32.6 \times 10}{10 \times 10} = \frac{326 \div 2}{100 \div 2} = \frac{163}{50}$

$\frac{163}{50} = 3 \frac{13}{50}$

\* Also look at place value.

b) 0.125

Percent

$0.125 \times 100\% = 12.5\%$   
 or

$0.125 = 12.5\%$

Fraction

$0.125 \xrightarrow{\text{thousandths spot}} \frac{125}{1000} \xrightarrow{\div 125} \frac{1}{8}$





c) 0.0032  
Percent

$$0.0032 \times 100\% = 0.32\%$$

or

$$0.0032 = 0.32\%$$

Fraction

$$0.0032 =$$

↑

10 thousandths

$$\frac{32}{10000} \div 16 = \frac{2}{625}$$

$$= \frac{2}{625}$$

### Example 3

Convert Fractions to decimals & percents

Express each fraction as a decimal and percent

a)  $\frac{1}{20}$

decimal

$\frac{1}{20}$  this also means

$$1 \div 20$$

$$1 \div 20 = 0.05$$

Percent

you must convert fraction to decimal then  $\times 100\%$ .

$$1 \div 20 = 0.05 \times 100\% = 5\%$$

you can also change to a denominator of 100%

$$\frac{1}{20} \times \frac{5}{5} = \frac{5}{100} = 5\%$$

b)  $\frac{71}{200}$

decimal

$$71 \div 200 = 0.355$$

percent

$$71 \div 200 = 0.355 \times 100\% = 35.5\%$$

$$\frac{71}{200} \div \frac{2}{2} = \frac{35.5}{100}$$





$$c) \frac{4}{3}$$

decimal  
 $4 \div 3 = 1.\overline{33}$

percent  
 $4 \div 3 = 1.33 \times 100\% = 133.\overline{3}\%$

$$\frac{4}{3} \times \frac{100}{100} = \frac{400}{3} = 133.\overline{3}$$

difficult  
to do when  
it doesn't have  
a terminating number

Example 4 Convert Percents with a Fractional Part  
 for all questions dealing with %, you ALWAYS need  
 to convert % to a decimal. Sometimes you can  
 just  $\div$  by 100 but some numbers are not  
 that simple.

a)  $1\frac{1}{2}\%$  convert to a decimal.

$$\begin{aligned} 1\frac{1}{2}\% &= 1\% + \frac{1}{2}\% \\ &= 1\% + (1 \div 2)\% \\ &= 1\% + 0.50\% \\ &= 1.5\% \quad \checkmark \end{aligned}$$

b)  $3\frac{1}{4}\%$  convert to decimal

$$\begin{aligned} 3\frac{1}{4}\% &= 3\% + \frac{1}{4}\% \\ &= 3\% + (1 \div 4)\% \\ &= 3\% + 0.25\% \\ &= 3.25\% \quad \checkmark \end{aligned}$$

c)  $20\frac{1}{2}\%$  convert to decimal

$$\begin{aligned} 20\frac{1}{2}\% &= 20\% + \frac{1}{2}\% \\ &= 20\% + (1 \div 2)\% \\ &= 20\% + 0.50\% \\ &= 20.5\% \end{aligned}$$



Practice Q's for 8.2 pg 271

# 1-3 ACE

# 4-7 ALL

# 8, 10, 13, 15, (19) challenge