

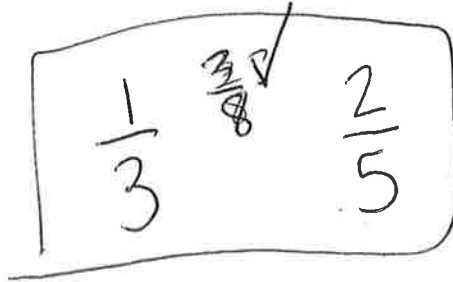
Lesson 3-9 Notes
Fractions and Decimals

Review: Put the fractions below in order from least to greatest.

$$\frac{1}{3} = \frac{5}{15}$$

$$\frac{2}{5} = \frac{6}{15}$$

$$\frac{2}{5} \quad \frac{3}{8} \quad \frac{1}{3}$$



$$\frac{1}{3} = \frac{8}{24}$$

$$\frac{3}{8} = \frac{9}{24}$$

$$\frac{3}{8} = \frac{15}{40}$$

$$\frac{2}{5} = \frac{16}{40}$$

Writing Fractions into Decimals

Common Fractions & Decimals

action	Decimal
$\frac{1}{4}$	0.25
$\frac{1}{2}$	0.5
$\frac{3}{4}$	0.75
$\frac{1}{3}$	$0.3333... \rightarrow 0.\overline{3}$
$\frac{2}{3}$	$0.\overline{6}$

What if I need to convert a less common fraction into a decimal?

Write $\frac{5}{8}$ as a decimal.

Divide the numerator by the denominator. Don't forget to add decimal places.

$$\begin{array}{r} .625 \\ 8 \overline{) 5.000} \\ \underline{-48} \\ 20 \\ \underline{-16} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

When the division ends with a remainder of zero, the quotient is called a **terminating decimal**.

$$\frac{5}{8} = 0.625$$

You try! Write each fraction below as a decimal.

$$\frac{3}{5}$$

$$\begin{array}{r} .6 \\ 5 \overline{) 3.0} \\ \underline{-30} \\ 0 \end{array} = \boxed{0.6}$$

$$\frac{9}{12}$$

$$\begin{array}{r} .75 \\ 12 \overline{) 9.00} \\ \underline{-84} \\ 60 \\ \underline{-60} \\ 0 \end{array} = \boxed{0.75}$$

Some fractions are written as repeating decimals.

$$\frac{3}{11}$$

$$\begin{array}{r} .2727\dots \\ 11 \overline{) 3.0000} \\ \underline{-22} \\ 80 \\ \underline{-77} \\ 30 \\ \underline{-22} \\ 80 \end{array}$$

$$= 0.\overline{27}$$

You Try! Write each fraction as a decimal.

$$\frac{1}{3}$$

$$\begin{array}{r} .333 \\ 3 \overline{) 1.000} \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \end{array} = \boxed{0.\overline{3}}$$

$$\frac{5}{9}$$

$$\begin{array}{r} .555 \\ 9 \overline{) 5.000} \\ \underline{-45} \\ 50 \\ \underline{-45} \\ 50 \end{array} = \boxed{0.\overline{5}}$$

You Try! Use what you've learned about fractions and decimals to write the numbers below in order from least to greatest.

$$\frac{1}{4}$$

1.1

$$\frac{3}{5}$$

0.2

Writing a Decimal as a Fraction

Follow these steps for terminating decimals.

Write 0.42 as a fraction.

Step 1: Read the decimal 0.42 aloud. Could you write this as a fraction?

$$\frac{42}{100}$$

Step 2: Simplify the fraction. You're done!

$$\frac{42 \div 2}{100 \div 2} = \frac{21}{50}$$

If a decimal is greater than 1, you can write it as a mixed number.

Write 1.12 as a fraction.

$$1 \frac{12}{100} \xrightarrow{\div 2} \frac{6}{50} \xrightarrow{\div 2} \frac{3}{25}$$

$$1 \frac{3}{25}$$

You Try! Write the decimals below as fractions.

0.65 $\frac{65 \div 5}{100 \div 5} = \frac{13}{20}$

2.32 $2 \frac{32 \xrightarrow{\div 4}}{100 \xrightarrow{\div 4}} \frac{8}{25} = 2 \frac{8}{25}$