

Name _____

Date _____

Mr. Tallman

Math 7

Do Now**Reduce the following fractions to their simplest forms.**

1) $\frac{15 \div 5}{30 \div 5} = \frac{3 \div 2}{6 \div 2} = \frac{1}{2}$

2) $\frac{9 \div 9}{27 \div 9} = \frac{1}{3}$

3) $\frac{16 \div 8}{24 \div 8} = \frac{2}{3}$

Identify the place value of each underlined number.3) 0.349744) 4.755) 3.89004HundredthsTenthsTen-thousandths**Lesson #12 - Converting Between Fractions and Decimals**Example 1) Convert $\frac{1}{8}$ into a decimal using long division.**Steps to converting a fraction into a terminating decimal using long division:**

Steps	Example
1) Reduce the fraction. Write a division problem where we are dividing the denominator into the numerator .	Already reduced $8 \overline{)1}$
2) Place a decimal point and a place holder zero after the last digit inside the division symbol.	$8 \overline{)1.0}$
3) "Bring up" the decimal point and begin dividing.	$\begin{array}{r} 8 \overline{)1.000} \\ \underline{8} \\ 20 \\ \underline{16} \\ 40 \\ \underline{40} \\ 0 \end{array}$
4) If the decimal ends or repeats, stop dividing. Be sure to include a repeat bar in your answer if the decimal repeats	$\cdot 125$

Example 2) Convert $2\frac{5}{8}$ into a decimal using long division.

$$\begin{array}{r}
 9 \overline{) 5.000} \\
 \underline{45} \\
 50 \\
 \underline{45} \\
 50
 \end{array}$$

2.55

Now, You Try!

Convert the following fractions into decimals using long division.

<p>3) $\frac{5}{8}$</p> $ \begin{array}{r} 8 \overline{) 5.000} \\ \underline{48} \\ 20 \\ \underline{16} \\ 40 \\ \underline{40} \\ 0 \end{array} $ <p style="text-align: center;">0.625</p>	<p>4) $\frac{4}{9}$</p> $ \begin{array}{r} 9 \overline{) 4.000} \\ \underline{36} \\ 40 \\ \underline{36} \\ 40 \end{array} $ <p style="text-align: center;">0.44</p>	<p>5) $2\frac{7}{12}$</p> $ \begin{array}{r} 12 \overline{) 7.000} \\ \underline{60} \\ 100 \\ \underline{96} \\ 40 \\ \underline{36} \\ 40 \end{array} $ <p style="text-align: center;">2.583</p>
--	--	---

We can also convert **decimals into fractions**.

Example 6) Convert 0.25 into a fraction in lowest terms.

Steps to converting decimals into fractions:

Steps	Example
1) Identify the decimal place value in which the number terminates or repeats.	Hundredths
2) Create a fraction. The numerator is simply the decimal portion of the number. The denominator is found by determining which place value the decimal terminates. For terminating decimals, think 10's. The number of 10's depends on where the decimal terminates or how many digits repeat.	$ \frac{25}{100} $
3) Reduce the fraction to lowest terms.	$ \frac{25 \div 25}{100 \div 25} = \frac{1}{4} $

Example 7) Convert $5\frac{42}{100}$ into a fraction in lowest terms.

$$\frac{42}{100} \div 2 = \frac{21}{50} \quad \text{and} \quad 5\frac{21}{50}$$

Now, You Try!

Convert the following decimals into a fraction or mixed number in lowest terms.

<p>8) 0.8</p> $\frac{8}{10} \div 2 = \frac{4}{5}$	<p>9) -0.23</p> $-\frac{23}{100}$	<p>10) 4.128</p> $4\frac{128}{1000} \div 2 = 4\frac{64}{500} \div 2 = 4\frac{32}{250} \div 2 = 4\frac{16}{125}$
<p>11) 0.3</p> $\frac{3}{10}$	<p>12) 2.137</p> $2\frac{137}{1000}$	<p>13) -5.3</p> $-5\frac{3}{10}$

14) Order the following from least to greatest.

$$-\frac{2}{3}, \frac{5}{9}, 0.5, -1.3, -\frac{10}{3}$$

$$\begin{matrix} \downarrow & \downarrow & & & \downarrow \\ -0.\bar{6} & 0.\bar{5} & & & -3.\bar{3} \end{matrix}$$

$$-\frac{10}{3}, -1.3, \frac{2}{3}, 0.5, \frac{5}{9}$$

15) In one season, Sammy Sosa had 189 hits during his 577 at-bats. What was Sammy Sosa's average (as a decimal)? Round to the nearest thousandth.

$$\frac{189}{577}$$

~~$$577 \overline{) 189.00}$$

$$\begin{array}{r} 31 \\ 577 \overline{) 189.00} \\ \underline{1731} \\ 1590 \\ \underline{1360} \end{array}$$~~

$$577 \overline{) 189.0000}$$

$$\begin{array}{r} .3275 \\ 577 \overline{) 189.0000} \\ \underline{1731} \\ 1590 \\ \underline{1154} \\ 4360 \\ \underline{4039} \\ 3210 \\ \underline{2885} \end{array}$$

$$0.3275$$

$$\uparrow$$

$$0.328$$