CONVERTING BETWEEN FRACTIONS, DECIMALS, AND PERCENTS DIRECTED LEARNING ACTIVITY

Objective: Convert between fractions, decimals, and percents.

Activity: You will learn how to convert fractions to decimals and percents and vice versa. Then you will practice all of these strategies in one activity at the end.

Converting a fraction to a decimal.
Example 1. Convert $\frac{5}{8}$ to a decimal.

Steps to convert a fraction to a decimal.

1. Use long division to divide the numerator by the denominator.

$$\begin{array}{c|c}
0. \overline{625} & \text{Remember to put the 0 and the decimal point on top. Then add zeros as you need them to divide.} \\
8)5.000 & \\
-48 & \\
\hline
20 & \\
16 & \\
\hline
40 & \\
40 & \\
\hline
0 & \\
\end{array}$$

When we convert $\frac{5}{8}$, the decimal result is ______________.

Now try one on your own!

Example 2. Convert $\frac{1}{5}$ to a decimal.

1. Use long division to divide the numerator by the denominator.

Did you get 0.2? Great!!

If you did not get this, check with the tutor to determine where you may have made an error.
Converting a decimal to a fraction.

**Example 3.** Convert 0.74 to a decimal.

**Steps to convert a decimal to a fraction.**

1. **Rewrite the decimal as a fraction by saying the decimal name out loud using place value.**

   0.74 is “seventy-four hundredths”

   $0.74 = \frac{74}{100}$

2. **Reduce the fraction, if necessary.**

   $\frac{74}{100}$ is not reduced because both numerator and denominator can be divided by 2.

   $\frac{74}{100} = \frac{37}{50}$

Now, try one on your own!

**Example 4.** Convert 0.88 to a decimal.

1. **Rewrite the decimal as a fraction by saying the decimal name out loud using place value.**

2. **Reduce the fraction, if necessary.**

Did you get $\frac{22}{25}$? Good work!

If you did not get this, check with the tutor to determine where you may have made an error.
Convert a percent to a decimal.

**Example 5.** Convert 59% to a decimal.

**Steps to convert a percent to a decimal.**

1. Divide the number by 100 (percent means per 100.)

\[
59\% = \frac{59}{100}
\]

Now, you could actually do this long division to get to 0.59. Or, we can read this number as “fifty-nine hundredths”, which becomes 0.59 as a decimal. Either way, notice that if we had moved the decimal two places to the left we would have gotten the same result. We can use this short-cut on future problems.

**Example 6.** Convert 33% to a decimal.

1. Divide the number by 100 OR move the decimal two places left.

\[
33\% = 0.33
\]

Now, your turn!

**Example 7.** Convert 91% to a decimal.

You should get 0.91.

If you did not get this, check with the tutor to determine where you may have made an error.

Convert a decimal to a percent.

**Example 8.** Convert 0.45 to a percent.

Remember, to go from a percent to a decimal, we divide by 100. So, to go the other direction, from a decimal to a percent, we will multiply by 100.

**Steps to convert from a decimal to a percent.**

1. Multiply by 100.

\[0.45 \times 100 = 45\%\]
Notice, this is the same result as if we had moved the decimal two places right.

**Example 9.** Convert 0.17 to a percent.

1. **Multiply by 100 OR move the decimal two places right.**
   
   \[0.17 = 17\%\]

Now, you try one!

**Example 10.** Convert 0.98 to a percent.

Did you get 98%? Fabulous!

If you did not get this, check with the tutor to determine where you may have made an error.

**Convert a fraction to a percent**

**Example 11.** Convert \(\frac{3}{4}\) to a percent.

**Steps to convert a fraction to a percent**

1. **Convert the fraction to a decimal using long division.**

   \[
   \begin{array}{c|c}
   \hline
   4 & 3.00 \\
   \hline
   & 28 \\
   & 20 \\
   & 20 \\
   & 0 \\
   \end{array}
   \]

   \[0.75 = 75\%\]

Now, your turn!
Example 12. Convert \( \frac{3}{5} \) to a percent.

1. Convert the fraction to a decimal using long division.

2. Convert the decimal to a percent by multiplying by 100 OR moving decimal two places right.

Did you get 0.60?  Awesome!

If you did not get this, check with the tutor to determine where you may have made an error.

Convert a percent to a fraction.

Example 13. Convert 58% to a fraction.

Steps to convert a percent to a fraction.

1. Convert the percent to a decimal by dividing by 100 OR moving the decimal two places left.

\[ 58\% = 0.58 \]

2. Rewrite the decimal as a fraction by saying the decimal name out loud using place value.

\[ 0.58 \text{ is “fifty-eight hundredths”} \]

\[ 0.58 = \frac{58}{100} \]

3. Reduce the fraction, if necessary.

\[ \frac{58}{100} \text{ is not reduced. Both numerator and denominator can be divided by 2.} \]
So, $58 \% = \frac{29}{50}$.

Your turn!

**Example 14.** Convert 68\% to a fraction.

1. Convert the percent to a decimal by dividing by 100 OR moving the decimal two places left.

2. Rewrite the decimal as a fraction by saying the decimal name out loud using place value.

3. Reduce the fraction, if necessary.

Did you get $\frac{17}{25}$? Then you are ready for the last set of problems!!

If you did not get this, check with the tutor to determine where you may have made an error.
After you go over the previous problems with a tutor, try the following problem, then check with a tutor to make sure you did it correctly.

Use conversions to fill in the missing values in the table:

<table>
<thead>
<tr>
<th>reduced fraction</th>
<th>decimal</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.32</td>
<td></td>
<td>23%</td>
</tr>
<tr>
<td>$\frac{4}{5}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.4</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>$\frac{7}{8}$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For tutor use: Please check the appropriate box.

- [ ] Student has completed worksheet but may need further assistance. Recommend a follow-up with instructor.
- [ ] Student has mastered topic.