

Converting between Decimals, Fractions, and Percentages

- Change a decimal to a percentage

To change a decimal to a percent, move the decimal point two places to the right and add the percent symbol (“%”) at the end.

$$0.26 = 26\% \quad \text{Note: } 0.26 = \frac{26}{100} = 26\left(\frac{1}{100}\right) = 26\%$$

- Change a percentage to a decimal

To change a percent to a decimal, remove the percent symbol “%” and move the decimal point 2 digits to the left.

$$15\% = 0.15 \quad \text{Note: } 15\% = 15\left(\frac{1}{100}\right) = \frac{15}{100} = 0.15$$

- Change a fraction to a percentage

Method 1: To change a fraction to a percent, write the fraction as an equivalent decimal, and then move the decimal point 2 digits to the right. Finally, add a percent symbol “%” at the end.

$$\frac{12}{25} = 0.48 = 48\%$$

Method 2: To change a fraction to a percent, write the fraction as an equivalent fraction with a denominator of 100.

$$\frac{12}{25} = \frac{12 \times 4}{25 \times 4} = \frac{48}{100} = 48\%$$

- Change a percentage to a fraction

To change a percent to a fraction, replace the “%” symbol to a $\frac{1}{100}$ and reduce the fraction if necessary.

$$75\% = \frac{75}{100} = \frac{\overset{3}{\cancel{75}}}{\underset{4}{\cancel{100}}} = \frac{3}{4}$$

- Change a fraction to a decimal

To change a fraction to a decimal, divide the numerator of the fraction by the denominator.

$$\begin{array}{r} 0.36 \\ 25 \overline{)9.00} \\ \underline{-75} \\ 150 \\ \underline{-150} \\ 0 \end{array} \quad \rightarrow \quad \frac{9}{25} = 0.36$$

- Change a decimal to a fraction

To change a decimal to a fraction,

1. Put the entire number into the numerator of the fraction with the decimal removed.
2. Count the decimal places and write that decimal places in the denominator in the fraction.

For example, 2.431 have **thousandth** decimal place, you write **1000** in the denominator. 0.59 have **hundredth** decimal place, you write **100** in the denominator.

$$2.431 = \frac{2431}{1000}, \quad 0.59 = \frac{59}{100}$$

- Students should remember the following common conversions by heart.

| Percent | Decimal | Fraction |
|---------|---------|----------------|
| 25% | 0.25 | $\frac{1}{4}$ |
| 50% | 0.5 | $\frac{1}{2}$ |
| 75% | 0.75 | $\frac{3}{4}$ |
| 10% | 0.1 | $\frac{1}{10}$ |
| 100% | 1 | 1 |