

Converting between Decimals and Fractions

Fractions to Decimals

To convert from a fraction to a decimal it is as simple as performing the implied division as we learned in elementary school.

Terminating Decimals (division ends)

Ex.

$$\frac{5}{2} \text{ becomes } 2.5 \text{ since } 2 \overline{)5.0}$$

$$\frac{1}{4} \text{ becomes } .25 \text{ since } 4 \overline{)1.00}$$

Non-terminating Decimals (repeating decimals)

Ex.

$$\frac{1}{3} \text{ becomes } \overline{.3333} \text{ since } 1 \overline{)3.0000} \text{ repeating } 3\text{'s forever}$$

$$\frac{14}{99} \text{ becomes } \overline{.1414} \text{ since } 99 \overline{)14.00} \text{ repeating } 14\text{'s forever}$$

Decimals to Fractions

Remember that decimals are actually fractions with the denominator as an appropriate power of ten (the number of zeroes after the one is equal to the number of places to the right of the decimal point)

Ex.

$$.5 \text{ has } 1 \text{ place to right so it is } \frac{5}{10} \text{ reduced to } \frac{1}{2}$$

$$.125 \text{ has } 3 \text{ places right so it is } \frac{125}{1000} \text{ reduced to } \frac{1}{8}$$

$$3.4 \text{ has } 1 \text{ place right so it becomes } \frac{34}{10} \text{ reduced to } 3\frac{2}{5}$$