

## Convert Unit Rates: L1-3

**Unit Ratio:** A ratio in which the denominator is 1 unit.

**Dimensional Analysis:** A structured process for converting one set of units to another set of units.

**Example**

The speed limit on the interstate is 65 MILES per HOUR. How many FEET per MINUTE is the speed limit?

- What units are you starting with? What units are you converting to?

Starting Set of Units: miles , hour Ending Set of Units: feet , minute



### Dimensional Analysis Formula

$$\frac{A}{B} \cdot \frac{C}{A} \cdot \frac{B}{D}$$

**Example**

The speed limit on the interstate is 65 miles per hour. How many feet per minute is the speed limit?

Steps in Math	Steps in Words
The speed limit on the interstate is 65 <u>miles</u> per <u>hour</u> . How many <u>feet</u> per <u>minute</u> is the speed limit? <div style="text-align: center; margin-top: 10px;"> <span style="margin: 0 10px;">A</span> <span style="margin: 0 10px;">B</span> <span style="margin: 0 10px;">C</span> <span style="margin: 0 10px;">D</span> </div>	1. Label the units A-D from left to right
$\frac{A \text{ (mi)}}{B \text{ (h)}} \cdot \frac{C \text{ (ft)}}{A \text{ (mi)}} \cdot \frac{B \text{ (h)}}{D \text{ (min)}}$	2. Put the units in the correct spot within the formula