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Convert Unit Rates: L1-3

Unit Ratio: A ratio in which the denominator is _____ 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: _____, _____. Ending Set of Units: _____, _____.

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 miles per hour. How many feet per minute is the speed limit?	1. Label the **units** A-D from left to right
$\frac{A}{B} \cdot \frac{C}{A} \cdot \frac{B}{D}$	2. Put the units in the correct spot within the formula

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_____ · _____ · _____	**3.** Fill in the **numbers** associated with the units. Make sure to look at the *Conversion Relationships* on the **FSA Reference Sheet** to find the Conversion Relationships associated with the correct units in the formula. The first Set of units ($\frac{1}{2}$) will be from the problem itself
_____ · _____ · _____	**4.** Cross out common **unit(s)** (one from the Numerator and one from the Denominator) • You should be left with the two units you're converting to
	5. Compute and Simplify.

The speed limit is _____ feet per minute.

YOUR TURN

Convert each rate.

1. 10 mi/h = _____ ft/min

2. 35 cm/sec =_____ m/min

3. Tina walks at a rate of 180 feet per minute. How many feet per second does Tina walk?