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Convert 60 miles/hr. into feet/sec

Note: 60 miles per hour is a speed which is some distance divided by some time.

Write the speed as a fraction.

$$V = \frac{60 \text{ miles}}{1 \text{ hour}} \quad \left(\text{Since a mile is the same as 5280 feet multiply by } \frac{5280}{1} \right)$$

$$V = \frac{60 \text{ miles}}{1 \text{ hour}} \cdot \frac{5280 \text{ feet}}{1 \text{ mile}} \quad \left(\text{The unit of miles over miles reduces to 1} \right)$$

$$V = \frac{(60)(5280 \text{ feet})}{1 \text{ hour}} = \frac{316800 \text{ feet}}{1 \text{ hour}}$$

$$V = \frac{316800 \text{ feet}}{\cancel{1 \text{ hour}}} \cdot \frac{\cancel{1 \text{ hour}}}{60 \text{ min}} = \frac{5280 \text{ feet}}{1 \text{ min}}$$

$$V = \frac{5280 \text{ ft}}{\cancel{1 \text{ min}}} \cdot \frac{\cancel{1 \text{ min}}}{60 \text{ sec}} = \frac{88 \text{ feet}}{1 \text{ sec}}$$

This can be done all on 1 line as shown below

$$V = \frac{\cancel{60} \text{ miles}}{\cancel{1 \text{ hour}}} \cdot \frac{5280 \text{ ft}}{1 \text{ mile}} \cdot \frac{\cancel{1 \text{ hour}}}{\cancel{60} \text{ min}} \cdot \frac{\cancel{1 \text{ min}}}{60 \text{ sec}} = \frac{88 \text{ feet}}{1 \text{ second}}$$