

Introduction to Rates

A rate is the comparison of two quantities that have different units.

Rates are written as fractions

A cyclist rode 144 miles in 10 hours. We can write a distance to time ratio for the trip

$$\frac{144\text{miles}}{10\text{hours}} = \frac{72\text{miles}}{5\text{hours}}, \text{ always simplify the fraction, whenever possible}$$

Unit rates

Whenever a rate has 1 as the denominator, it is referred to as a unit rate.

$$2 \text{ pounds of sirloin sell for } \$6.25, \frac{\$6.25}{2\text{lbs}} = \frac{\$3.25}{1\text{lb}}, \text{ or } \$3.25 \text{ per pound}$$

$$\text{A car travels 360 miles in 6 hours, } \frac{360\text{miles}}{6\text{hours}} = \frac{60\text{miles}}{1\text{hour}}, \text{ 60 miles per hour}$$