Understanding Rates

A rate is a ratio in which the two terms are measured in different units.

Example: 18 bracelets for 3 girls.
\[
\frac{18 \text{ bracelets}}{3 \text{ girls}}
\]

In a unit rate, the second number is 1.

Example: 6 bracelets for 1 girl.
\[
\frac{6 \text{ bracelets}}{1 \text{ girl}}
\]

Remember that the fraction bar shows division. If you know a rate, you can divide to find the unit rate.

Example: 17 goals in 5 games is written as
\[
\frac{17 \text{ goals}}{5 \text{ games}}
\]

The unit rate is 3.4 goals per game. (Per means “for each”.)

Write the rate and the unit rate.

1. 25 flowers for 5 vases
   \[
   \frac{25 \text{ flowers}}{5 \text{ vases}}
   \]

2. 32 games in 8 weeks
   \[
   \frac{32 \text{ games}}{8 \text{ weeks}}
   \]

3. 144 pencils in 12 packages
   \[
   \frac{144 \text{ pencils}}{12 \text{ packages}}
   \]

4. 252 students in 9 classes
   \[
   \frac{252 \text{ students}}{9 \text{ classes}}
   \]

5. $13.20 for 6 pounds
   \[
   \frac{13.20}{6 \text{ pounds}}
   \]

6. 34 minutes for 8 pages
   \[
   \frac{34 \text{ minutes}}{8 \text{ pages}}
   \]

7. **Number Sense** If a car travels 350 miles in 7 hours, what is its rate per hour?

8. **Estimation** Bare root plum trees are on sale at 3 for $40. To the nearest dollar, what is the cost per tree?