

Lesson 2-1: Connect Ratios, Rates, and Unit Rates

1. Sample answer: You can use ratios or rates to represent related quantities with the same or different units in a problem. Then you can divide or multiply to find unit rates and other equivalent ratios, which is a way to find other pairs of related quantities. Unit rates can also make it easier to compare two or more ratios.

2. $\begin{array}{cc} \$21.98 & 2 \\ \$10.99 & 1 \end{array}$ $\begin{array}{cc} \$26.25 & 3 \\ \$8.75 & 1 \end{array}$

The dried apricots are less expensive, by \$2.24 per pound.

3. Sample answer: Given a ratio, its unit rate is one of the equivalent ratios you can find. A unit rate and any other equivalent ratio represent the same relationship between the two quantities in the given ratio.

4. Plan 1; She will save \$120 over 1 year.

5. Pam will read 210 pages in 5 hours, so she will not finish the book. Zack will read 225 pages in 5 hours, so he will be able to finish the book.

6. Nora can make 40 spring rolls in 50 minutes. Eli can make 40 spring rolls in 48 minutes. Eli will finish first.

7. $\begin{array}{cc} 9,780 & 5 \\ 1,956 & 1 \end{array}$ $\begin{array}{cc} 11,928 & 6 \\ 1,988 & 1 \end{array}$

David

$$1,988 - 1,956 = 32$$

8. $\begin{array}{cc} \$29.45 & 5 \\ \$5.89 & 1 \end{array}$

\$5.89

9. 18-ounce package

10. \$5.70

11. 10 tutors

12. \$0.70 per mile; \$32.90

13. a. Company C
b. \$2.26

14. a. \$1.23 per hour
b. The contractor's unit price is per dozen pairs, not per pair of gloves.

15. A package of the 6.5-oz cans has the lowest price.

16. a. Sample answer: No; 2 batches of mac-and-cheese require 12 ounces of cheese. 3 pizzas require 24 ounces of cheese. Lena needs 36 ounces of cheese in total, so the 32-oz package is not enough.

b. Sample answer: 9.5 tablespoons; 1 batch of mac-and-cheese requires 2 tablespoons of basil. 3 pizzas require 7.5 tablespoons of basil. Lena needs $2 + 7.5$ or 9.5 tablespoons of basil.

17. A, C, E