5.1: Ratios and Rates

Convert the measurement.

1. 30 min  h 2. 4 h  min

3. 15 sec  min 4. 60 h  days

5. 3 days  h 6. 1 wk  h

You and your sister go to a store. You buy   
3 erasers for $1.00. Your sister buys 4 erasers for $1.25. Explain who gets the ***better deal.***

Find the product. List the units.

1.  2. 

3.  4. 

5.  6. 

Ratio: A comparison of two quantities using division

Ex.: 5:10; 5 to 10; 5/10

Rate: A ratio of two quantities with different units

Ex.: 5 pounds/$3.00

Unit Rate: A rate with a denominator of 1

Ex.: $16.50/1 t-shirt

Find the product. List the units.

1.  2.  3. 

Write the ratio as a fraction in simplest form.

4. 12 to 15 5. 24 : 9 6. 14 tetras : 6

angelfish

Find the unit rate.

7. 360 miles in 6 hours 8. 18 bowlers on 6

lanes

9. $28 for 7 people

Use the ratio table to find the unit rate with respect to the specified units.

10. Laps per minute 11. Grams of protein per

serving

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Servings** | 0 | 1 | 2 | 3 |
| **Grams of Protein** | 0 | 15 | 30 | 45 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Minutes** | 0 | 2 | 4 | 6 |
| **Laps** | 0 | 1 | 2 | 3 |

12. At 9 a.m. you have run 2 miles. At 9:24 a.m. you have run 5 miles. What is your running rate in minutes per mile?

13. Are the two statements equivalent? Explain your reasoning.

* The ratio of orange to blue is 3 to 4.
* The ratio of blue to orange is 12 to 9.

14. There are 234 students in 9 different classrooms. What is the ratio of students to classrooms?

15. Dishwasher detergent is sold in individual packs. It is sold in 20-, 60-, and 90-pack containers.

a. Which container do you think has the lowest unit rate of dollars per pack? Why?

b. The 20-pack container sells for $5.49. What is the unit rate in dollars per pack? Round your answer to the nearest cent.

c. The 60-pack container sells for $10.97. What is the unit rate in dollars per pack? Round your answer to the nearest cent.

d. The 90-pack container sells for $18.95. What is the unit rate in dollars per pack? Round your answer to the nearest cent.

e. Which container has the lowest unit rate? How does this compare with your answer in part (a)?