

Chapter 9 Review

9.1

Identify the units of the following quantities. State the units mathematically (for example, mi/hr) and in words (for example, miles per hour).

1. The unit price of oranges, found by dividing the price in dollars by the weight in pounds.
2. The production rate of a bagel bakery, found by dividing the number of bagels produced by the time required in hours.

Carry out the following unit conversions.

3. Convert 24 feet to yards
4. Convert 15 gallons to quarts
5. Convert 60 miles per hour to units of miles per minute.
6. Convert 1 ton to ounces.
7. The bed of a truck is 3.5 feet deep, 12 long, and 5 feet wide.
 - a. What is the area of the bed's floor?
 - b. What is the volume of the bed?
8. Find the area in square feet of a rectangular yard that measures 20 yards by 12 yards.
9. A hot tub pump circulates 4 cubic feet of water per minute. How many cubic inches of water does it circulate each minute?
10. As you leave Paris, you convert 4500 euros to dollars. How many dollars do you receive?
11. Bottled water costs 0.75 euro per liter in Paris. What is the price in units of U.S. dollars per quart?
12. Cantaloupes sell for 1.80 euros per kilogram in Belgium. What is the price in units of U.S. dollars per pound?
13. A human heart beats about 70 times per minute. If an average human being lives to the age of 80, how many times does the average heart beat in a lifetime?
14. Suppose your car averages 32 miles per gallon on the highway if your average speed is 60 miles per hour, and it averages 25 miles per gallon on the highway if your average speed is 75 miles per hour.
 - a. What is the driving time for a 1500-mile trip if you drive at an average speed of 60 miles per hour? What is the driving time at 75 miles per hour?
 - b. Assume a gasoline price of \$2.90 per gallon. What is the gasoline cost for a 1500-mile trip if you drive at an average speed of 60 miles per hour? What is the gasoline cost at 75 mile per hour?

9.2

Answer the following questions involving conversions within the USCS system.

15. What is the weight in tons of a 345-pound lineman?
16. Suppose you bought 10 six-packs of soda, each six-pack containing six 12-ounce cans. How many gallons of soda did you buy?
17. How many quarts does an 18 gallon gasoline tank hold? How many pints? How many ounces?
18. A small city produces 500,000 cubic feet of garbage per week. If all of this garbage were stacked nearly (in a vertical pile) on a 100-yard by 60-yard football field, how high would the pile be (in feet)?

Complete the following sentences with a number. All answers should be greater than 1.

19. A kilogram is _____ times as large as a milligram.
20. A kilometer is _____ times as large as a micrometer.
21. A cubic meter is _____ times as large as a cubic millimeter.

Convert the following quantities to the indicated units.

22. 160 centimeters to inches
23. 2 square kilometers to square miles
24. 120 kilometers per hour to miles per hour
25. 20 square meters to square feet
26. 18 grams per cubic centimeter to pounds per cubic inch

Convert the following temperatures from Fahrenheit to Celsius or vice versa.

27. a. -8°C b. 15°F c. 15°C d. 75°F e. 20°F

Convert the following temperatures from Kelvin to Celsius or vice versa.

28. a. -40°C b. 400°F c. 125°C