1. David takes 300 milligrams of medicine every day. Find this rate in grams per day.

2. Jody runs the 500-yard dash for his school’s track team in 1 minute. Find this rate in yards per second.

3. Sean drinks six 12-fluid ounce cans of soda a week. Find this rate in pints per week.

4. One quart is about 0.946 liters. A recipe for punch requires diluting the punch concentrate with 7 quarts of water. To the nearest tenth, how many liters of water are required to dilute the concentrate according to the directions?

5. One pound is about 0.454 kilograms. Jesse’s dog Angel weighs $\frac{18}{2}$ pounds. To the nearest tenth, how many kilograms does Angel weigh?

6. One mile is about 1.61 kilometers. The volcano Mauna Kea is 120 km wide. What is the width of the volcano in miles, rounded to the nearest tenth of a mile?

7. A 1-pound weight has a mass of about 0.45 kilograms. A car weighs 2100 pounds. What is the mass of the car in kilograms, rounded to the nearest tenth of a kilogram?

8. Tyler is riding his bike from his house to the store, which is 4 miles away. Tyler gets to the store 18 minutes after he leaves his house. Find Tyler’s speed in miles per minute. Use dimensional analysis to check the reasonableness of your answer.
Problem Solving

Dimensional Analysis

Use the following: 1 mile = 1.609 km; 1 kg = 2.2046 lb. Round to the nearest tenth.

1. Chinook salmon travel up to 3,000 km to find spawning grounds. How far will a Chinook salmon travel in miles?

2. Chinook salmon can travel at 23 km/h. How fast can the Chinook salmon travel in miles per hour?

3. The average rhinoceros weighs 1600 kg. How many pounds does the average rhinoceros weigh?

4. An adult rhinoceros can have a horn that weighs 3.5 kg. How many pounds do these horns weigh?

Paraceratherium was the biggest land mammal there has ever been. It lived about 35 million years ago and was 11 m long. The blue whale is the largest mammal that has ever lived. It can be as long as 33 m. 1 foot = 0.3048 meters. Round to the nearest tenth.

5. How long is the blue whale in feet?

6. How long was the paraceratherium in feet?

Round to the nearest tenth. Choose the letter for the best answer.

7. The world’s fastest bird is the peregrine falcon that flies up to 200 mi an hour. How fast is the peregrine falcon in each second?
   A 136.4 ft/s   C 543.2 ft/s
   B 293.3 ft/s   D 9,680 ft/s

8. The longest gloved fight between two Americans lasted for more than seven hours before being declared a draw. How many seconds did the fight last?
   F 127 s   H 420 s
   G 385 s   J 25,200 s

9. The average person showers for eight minutes. How many seconds does it take the average person to shower?
   A 127 s   C 480 s
   B 385 s   D 28,800 s

10. The brain of an average adult female weighs 49 oz. How many pounds does the average female brain weigh?
    F 3.1 lb   H 13.8 lb
    G 5.8 lb   J 784 lb