

Dimensional Analysis Problems

Name:

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8 ounces = 1 cup
2.54 cm = 1 inch
16 cups = 1 gallon
10 milli = 1 centi

100 centi = 1 base
1000 base = 1 kilo
1 cm³ = 1 ml
1 gallon = 3.786 L

1 pound = 454 g
16 ounces = 1 pound
 $^{\circ}\text{F} = (9/5)(^{\circ}\text{C}) + 32$

1. You measure a person's height to be 5 feet and 10 inches.

a. What is the person's height in cm?

b. What is the person's height in m?

c. What is the person's height in km?

2. You measure a person's weight to be 154 pounds.

a. What is their weight in grams?

b. What is their weight in kg?

c. What is their weight in ounces?

3. When it is 70°F outside, what is the temperature in $^{\circ}\text{C}$?

4. You measure out 4 cups of water.
 - a. What is the volume in gallons?

 - b. What is the volume in liters?

 - c. What is the volume in cm^3 ?

5. You measure a cardboard box to be 1 m in length, 1 foot in width, and 1 cm in thickness.
 - a. Draw a picture of the box with its dimensions labeled.

 - b. What is the volume of the box in cm^3 ?

 - c. What is the volume in ml?

 - d. What is the volume in liters?