



10. Consider kryptonite from questions 8 and 9. Do you expect kryptonite to be homogeneous or heterogeneous? Justify your choice.

Homogeneous; all compounds are homogeneous.

11. Salt water is a homogeneous mixture.  
homogeneous or heterogeneous? mixture or compound?

12. A bowling ball has a density of 6.5 kg/L and a mass of 5 kg. What is its volume?

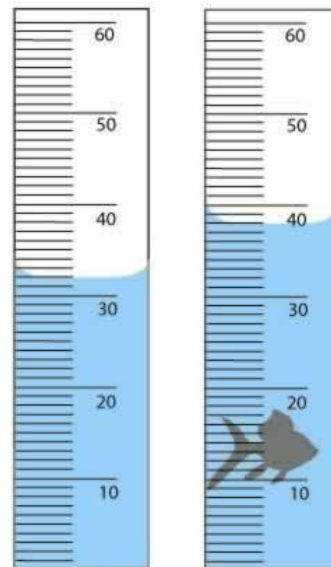
0.8 L

13. A 43 g piece of gold has a volume of 2.9 cm<sup>3</sup>. A piece of silver has a mass of 75 g and a volume of 6.7 cm<sup>3</sup>. Which metal has the greater density—the gold or the silver?

Gold has a density of 15 g/cm<sup>3</sup> compared to silver's density of 11 g/cm<sup>3</sup>

14. What is the density of the fish whose mass is 5.75g? (Hint: Use the diagram at the right to find the volume in mL of the fish first.)

0.96 g/mL



15. Convert the following numbers to scientific notation.

a) 14,020,000      b) 0.00030020      c) 5200

1.402x10<sup>7</sup>      3.0020x10<sup>-4</sup>      5.2x10<sup>3</sup>

16. How many significant figures are in each of the following numbers.

a) 0.0030320      b) 120,020      c) 10.0      d) 24.01      e) 145,000      f) 0.0003650  
5      5      3      4      3      4

17. Perform the following calculations making sure that your answers have the correct significant figures.

a) 1300 x 125 = 160,000      f) (1.2x10<sup>-5</sup>)(3.00x10<sup>12</sup>) = 3.6x10<sup>7</sup>

b) (2150)(10) = 20,000      g) 0.0022÷0.0510 = 0.043

c) 4000 ÷ 12 = 300      h) (0.04500)(0.20) = 0.0090

d) 4.5x10<sup>9</sup> ÷ 10 = 5x10<sup>8</sup>      i) 0.420 x 0.003 = 0.001

e) 358 x 200 = 70,000      j) 3200 ÷ 2 = 2000

18. Perform the following conversions between units:

a)  $2.55 \text{ m} = \underline{255} \text{ cm}$

e)  $12,040 \text{ }\mu\text{L} = \underline{12.04} \text{ mL}$

b)  $0.327 \text{ L} = \underline{327} \text{ mL}$

f)  $2.87 \text{ cm} = \underline{28,700,000} \text{ nm}$

c)  $10.5 \text{ kg} = \underline{10,500,000} \text{ mg}$

g)  $402 \text{ mg} = \underline{0.000402} \text{ kg}$

d)  $203 \text{ mm} = \underline{0.203} \text{ m}$

h)  $3.25 \text{ km} = \underline{325,000} \text{ cm}$

19. There are 12 ounces of Coke in each can and 24 cans in each case. A pallet of Coke contains 80 cases of Coke. Use this information to answer the following questions.

a) How many cans of Coke would there be in  $\frac{3}{4}$  of a pallet?

**1440 cases**

b) How many ounces of Coke are there in 1.5 cases?

**430 ounces**

c) During one year someone drank 450,000 ounces of Coke. How many cases did the person drink?

**1600 cases**

d) A store ordered 420 cases of Coke.

i. How many pallets did the store order?

**5.25 pallets**

ii. How many ounces did the store order?

**120,000 ounces**