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36. How many minutes are there in exactly one week?

37. How many seconds are in an exactly 40-hour work week?

38. An experiment requires that each student use an 8.5 cm length of magnesium ribbon. How many students can do the experiment if there is a 570 cm length of magnesium ribbon available?

40. An atom of gold has a mass of  $3.271 \times 10^{-22}$  grams. How many atoms of gold are in 5.00 g of gold?

41. Convert the following:

a. 0.044 km to meters

b. 4.6 mg to grams

c. 0.107 g to centigrams

42. Convert the following:

a.  $15 \text{ cm}^3$  to liters

b. 7.38 g to kilograms

c. 6.7 s to milliseconds

d. 94.5 g to micrograms

43. Use dimensional analysis and the given densities to make the following conversions:

a. 14.8 g of boron to  $\text{cm}^3$  of boron. The density of boron is  $2.34 \text{ g/cm}^3$ .

b. 4.62 g of mercury to  $\text{cm}^3$  of mercury. The density of mercury is  $13.5 \text{ g/cm}^3$ .

45. What is the mass, in grams, of a sample of cough syrup that has a volume of  $50.0 \text{ cm}^3$ ? The density of cough syrup is  $0.950 \text{ g/cm}^3$ ?

46. The radius of potassium atom is 0.227 nm. Express this radius in the unit centimeters.

47. The diameter of Earth is  $1.3 \times 10^4$  km. What is the diameter expressed in decimeters?