

Answers: 1. 1.59×10^{-5} Km 2. 982 cg 3. 13.455 Kg 4. 20.4 m/s 5. 4.52 Kg/L 6. 6.36 ml
7. 0.0668 g 8. 0.00546 sec 9. 4.15 mol 10. 4.2×10^{-23} 11. 1.1×10^9 12. 94.2 mg

Dimensional Analysis (Factor-Label Method)

Practice problem (level 2)

Use dimensional analysis in solving each of the following problems

1. Convert 15.9 mm to its equivalent measurement in Km.
2. Convert 0.0982 Hg to its equivalent measurement in cg.
3. Convert 13,455 g to its equivalent measurement in Kg.
4. Convert a speed of 73.5 Km/hr to its equivalent in m/s.
5. Convert a density of 4.52 g/mL to its equivalent in Kg/L
6. The density of iron is 7.86 g/mL. What volume of iron will have a mass of 50.00 g?
7. The density of helium gas is 0.178 g/L. What would be the mass of 375.0 mL of this gas?
8. A particle moving through a gas at a speed of 45.8 m/s strikes one wall of the container, bounces off and hits the other wall 25.0 cm away. How long did it take to go from one wall to the other?
9. A mole of sodium atoms contains 6.02×10^{23} atoms. How many moles would be needed in order to have 25.0×10^{23} atoms?
10. A mole of hydrogen atoms contains 6.02×10^{23} atoms. A section of outer space contains 25 atoms. How many moles of hydrogen is this?
11. The speed of light is 3.0×10^{10} cm/s. Express this speed in Km/hr.
12. A sample of seawater contains 6.277 g of sodium chloride per liter of solution. How many mg of sodium chloride would be contained in 15.0 mL of this solution?