

## Solutions Podcast #4: Molarity; SC7a



1. Calculate the molarity,  $M$ , of the following three solutions:
  - a. 3.0 moles of sodium chloride are dissolved in 1 liter of solution.
  - b. 0.5 moles of magnesium fluoride are dissolved in 2 liters of solution.
  - c. 3 moles of sodium hydroxide are dissolved in 0.25 liters of solution.
2. How many liters of a 4.0 M calcium chloride solution would contain 2 moles of calcium chloride?
3. How many liters of a 0.5 M calcium chloride solution would contain 3.5 moles of calcium chloride?
4. How many liters of a 2.5 M calcium chloride solution would contain 1.0 mole of calcium chloride?
5. How many moles of potassium chloride are there in 2 liters of a 3.0 M solution?
6. What is the molarity,  $M$ , of a solution in which 116 grams of potassium fluoride are dissolved in 2 liters of solution?
7. How many grams of potassium fluoride are in 2 liters of a 3.0 M solution of potassium fluoride?
8. How many grams of ammonia are dissolved in 85 mL of a 0.75 M solution?

9. The tanks in our classroom contain 34 grams of sodium chloride per liter. What is the molarity of the saltwater?
10. What is the molarity of 245.0 g of  $\text{H}_2\text{SO}_4$  dissolved in 1.000 L of solution?
11. What is the molarity of 5.30 g of sodium carbonate dissolved in 400.0 mL solution?
12. How many moles of sodium phosphide are contained in 100.0 mL of a 0.200 M solution?
13. What weight (in grams) of sodium phosphide would be contained in problem #12?
14. What volume (in mL) of 18.0 M sulfuric acid is needed to contain 2.45 g  $\text{H}_2\text{SO}_4$ ?