Molarity Practice Problems

1. How many grams of potassium carbonate are needed to make 200.0 mL of a 2.5 M solution? *(69 g)*

2. What is the concentration of as solution with a volume of 2.5 liters containing 660 grams of calcium phosphate? *(0.85 M)*

3. How many grams of copper (II) fluoride are needed to make 6.7 liters of a 1.2 M solution? *(820 g)*

4. What is the concentration of a solution with a volume of 9.0 mL that contains 2.0 grams of iron (III) hydroxide? *(2.1 M)*

5. How many grams of manganese (IV) oxide are needed to make 5.6 liters of a 2.1 M solution? *($1.0x10^3$ g)*

6. What is the concentration of a solution with a volume of 33 mL that contains 12 grams of ammonium sulfite? *(3.1 M)*

Dilution Practice Problems

7. If I add 25 mL of water to 125 mL of a 0.15 M sodium hydroxide solution, what will the concentration of the diluted solution be? *(0.13 M)*

8. If I add water to 100 mL of a 0.15 M sodium hydroxide solution until the final volume is 150 mL, what will the concentration of the diluted solution be? *(0.1 M)*

9. How much 0.05 M hydrochloric acid solution can be made by diluting 250 mL of 10 M hydrochloric acid? *(50 000 mL)*

10. I have 345 mL of a 1.5 M sodium chloride solution. If I boil the water until the volume of the solution is 250 mL, what will the concentration of the solution be? *(2.1 M)*

11. How much water would I need to add to 500 mL of a 2.4 M potassium chloride solution to make a 1.0 M solution? *(700 mL)*