Chemistry 11

Molarity/Dilutions Worksheet

Name:
Date:
Block:

1. **Molarity Problems** – Find the missing value.

Chemical	***Mass***	***Volume***	***Molarity***
a) Na_2SO_4	16.0 g	50.0 mL	_____
b) HCl	143.28 g	_____	4.25 M
c) $Pb(NO_3)_2$	_____	150.0 mL	3.00 M

2. Dilution Problems

(a) 110.0 mL of 3.00 M sulfuric acid has 25.0 mL of water added to it. What is the resulting concentration of the solution? *(2.44 M H_2SO_4)*

(b) How much water must be added to 50.0 mL sample of 18.0 M nitric acid to give a resulting concentration of 0.250 M? *(3550 mL H_2O)*

(c) Barium nitrate is purchased as a 17.0 M concentration. Explain how you would prepare 500.0 mL of a 5.00 M solution. *(147 mL H_2O)*

(d) If 25.0 mL of 4.0 M HNO_3 solution is diluted to a volume of 600.0 mL, what will be the molarity of the diluted solution? *(0.17 M HNO_3)*

(e) What initial volume of 18 M hydrochloric acid is required to make 2.0 L of 0.50 M hydrochloric acid solution? *(56 mL H_2O)*

(f) 250.0 mL of 0.20 M phosphoric acid is added to 1.00 L of water. What is the molarity of the resulting solution? *(0.040 M H_3PO_4)*