

Name \_\_\_\_\_

AP Chemistry

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### Molarity

1. How many moles of solid  $\text{Ba}(\text{NO}_3)_2$  should be added to 400. milliliters of 0.20-molar  $\text{Fe}(\text{NO}_3)_3$  to increase the concentration of the  $\text{NO}_3^-$  ion to 1.0-molar? (Assume that the volume of the solution remains constant.)
2. When 70. milliliters of 3.0-molar  $\text{Na}_2\text{CO}_3$  is added to 30. milliliters of 1.0-molar  $\text{NaHCO}_3$  the resulting concentration of  $\text{Na}^+$  is:
3. The weight of  $\text{H}_2\text{SO}_4$  (molecular weight 98.1) in 250.0 milliliters of a 6.00-molar solution is:
4. When 140. milliliters of 3.0-molar  $\text{Na}_2\text{CO}_3$  is added to 30. milliliters of 1.0-molar  $\text{NaHCO}_3$  the resulting concentration of  $\text{Na}^+$  is:
5. The weight of  $\text{H}_2\text{SO}_4$  (molecular weight 98.1) in 50.0 milliliters of a 6.00-molar solution is:
6. What is the final concentration of barium ions,  $[\text{Ba}^{2+}]$ , in solution when 100. mL of 0.10 M  $\text{BaCl}_2(\text{aq})$  is mixed with 100. mL of 0.050 M  $\text{H}_2\text{SO}_4(\text{aq})$ ?
7. How many moles of solid  $\text{Ba}(\text{NO}_3)_2$  should be added to 300. milliliters of 0.20-molar  $\text{Fe}(\text{NO}_3)_3$  to increase the concentration of the  $\text{NO}_3^-$  ion to 1.0-molar? (Assume that the volume of the solution remains constant.)
8. How many moles of solid  $\text{Ba}(\text{NO}_3)_2$  should be added to 700. milliliters of 0.20-molar  $\text{Fe}(\text{NO}_3)_3$  to increase the concentration of the  $\text{NO}_3^-$  ion to 0.80-molar? (Assume that the volume of the solution remains constant.)
9. When 90. milliliters of 3.0-molar  $\text{Na}_2\text{CO}_3$  is added to 40. milliliters of 1.0-molar  $\text{NaHCO}_3$  the resulting concentration of  $\text{Na}^+$  is:
10. The weight of  $\text{H}_2\text{SO}_4$  (molecular weight 98.1) in 150.0 milliliters of a 3.00-molar solution is: