

## REVIEW

## 6

## SECTION 6.3

## Acids, Bases, and pH

1. **Classify** each of the following substances as acidic, basic, or neutral:

- \_\_\_\_\_ a. a dilute solution of vinegar in water, which has more  $\text{H}_3\text{O}^+$  ions than  $\text{OH}^-$  ions
- \_\_\_\_\_ b. soapy water with a lower  $\text{H}_3\text{O}^+$  ion concentration than  $\text{OH}^-$  ion concentration
- \_\_\_\_\_ c. a solution with an equal concentration of hydronium ions and hydroxide ions
- \_\_\_\_\_ d. a bitter liquid,  $\text{pH} = 8$
- \_\_\_\_\_ e. pure water,  $\text{pH} = 7$
- \_\_\_\_\_ f. a tart solution of mixed citrus juices,  $\text{pH} < 7$

2. **Write** the balanced chemical equation that describes the ionization of nitric acid,  $\text{HNO}_3$ , in water.

3. **Write** the balanced chemical equation that describes the dissociation of the strong base magnesium hydroxide,  $\text{Mg}(\text{OH})_2$ , in water.

4. **Compare** the two kinds of bases, and give an example of each type.

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5. **Compare** the acidity of three solutions having pH values of 2, 3, and 6.

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6. **Write** the balanced equation for the reaction between water solutions of nitric acid,  $\text{HNO}_3$ , and magnesium hydroxide,  $\text{Mg}(\text{OH})_2$ .