

Chapter 16 HW

Review Questions: 5, 8, 15

Exercises: 1, 13, 28

Problems: 4, 5

Additional:

1. Indicate whether the following are a compound, mixture, or element:

- a. Copper
- b. Salt
- c. Aspirin
- d. Ice
- e. Plastic
- f. Aluminum
- g. H₂O

2. A sample of water that is 99.9999 percent pure contains 0.0001 percent impurities. A glass of water contains about a trillion, trillion (1×10^{24}) molecules. How many molecules in a glass of water are impure? What is the ratio of impure molecules to total molecules?

3. Calculate the concentration of the following.

- a. 10 grams of CO₂ is mixed with 355 mL of water
- b. 2 grams of HCl is mixed with 200 mL of water
- c. 0.25 kg concentrated orange juice is mixed with ½ a liter of water

4. Calculate the molarity.

- a. 200 moles calcium in 2 liters of water
- b. 2 moles of HCL in 200 mL of water

Extra Credit (6 points possible): you will need at least 3 days to complete

Step 1: Soak two uncooked eggs in vinegar for 24-48 hours until the shell is gone.

Step 2: Carefully place one egg in a glass of water.
Carefully place the other egg in a glass of molasses.

Step 3: Write what you observe for the change in size of each after 24 hours.

Step 4: Which egg experienced osmosis?
Which egg experienced reverse osmosis?