Cell Transport Worksheet

For Questions 1–5, write the letter of the correct answer on the line at the left.

- **1.** Which of the following must be true for diffusion to occur?
 - A. Molecules or particles must have different sizes.
 - B. Special protein channels must always be available.
 - C. There must be areas of different concentrations.
 - **D.** Energy must be available.
- **2.** Which term refers to the condition that exists when *no* net change in concentration results from diffusion?
 - A. concentration
 - **B.** equilibrium
 - C. osmosis
 - **D.** randomness
- **3.** Air has a higher concentration of oxygen molecules than does the cytoplasm of your lung cells. Where in your lungs will there be a net increase of oxygen?
 - A. in the air breathed in
 - **B.** in the air breathed out
 - C. outside of the lung cells
 - **D.** inside of the lung cells
 - **4.** Which of the following statements tells how active transport differs from passive transport? *Note: there may be more than one answer for this question.*
 - A. In active transport, particles move from high concentration to low.
 - **B.** In active transport, particles move from low concentration to high.
 - C. Active transport requires more energy than passive transport.

D. Active transport requires less energy than passive transport.

- **5.** Which of the following statements tells how facilitated diffusion differs from simple diffusion?
 - A. Particles move through cell membranes without the use of energy by cells.
 - **B.** Particles tend to move from high concentration to lower concentration.
 - C. Particles move within channel proteins that pass through cell membranes.
 - **D.** Particles tend to move more slowly than they would be expected to move.

Directions: For questions 6-8, draw arrows showing how the molecules would move. Your arrows should either point from inside the cell out, or from outside the cell in, depending on what type of cell transport is taking place.

Sample problem: Under FACILITATED DIFFUSION, how would these molecules move?



Explanation: Facilitated diffusion is just a specific type of diffusion, so the molecules would move from the region of high concentration to the area of low concentration. There are more molecules inside the cell, so that is your area of high concentration. So, the arrows are drawn from the inside of the cell out, indicating that molecules will move out of the cell to the area of low concentration.

6. Under DIFFUSION, draw how the molecules would move.



7. Under OSMOSIS, draw how the molecules would move.



What type of molecules are these specifically?

8. Under ACTIVE TRANSPORT, draw how the molecules would move.



9. The cytoplasm of a cell is mostly water, but also contains a variety of molecules and dissolved substances. Using a drawing and a description with proper vocabulary terms, predict what you think would happen if a cell was placed in an environment of pure water.