

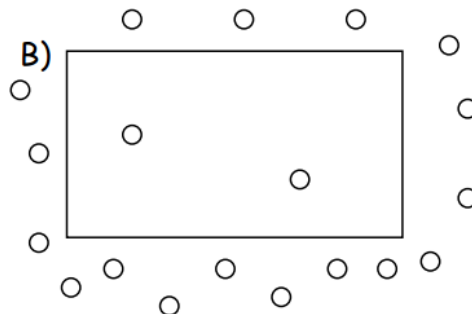
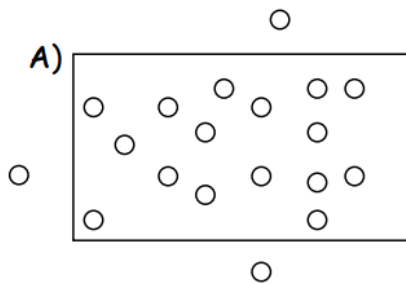
Name \_\_\_\_\_

## DIFFUSION AND OSMOSIS WORKSHEET

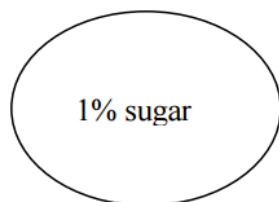
How are molecules moving in the examples below (1-9)? Write **OSMOSIS** or **DIFFUSION**.

1. The student sitting next to you just came from gym class and forgot to shower and you can tell. \_\_\_\_\_
2. After sitting in the bathtub for hours, your fingers start to look like prunes.  
\_\_\_\_\_
3. The girl sitting two rows ahead of you put on too much perfume this morning.  
\_\_\_\_\_
4. One way to get rid of slugs in your garden is to sprinkle salt on them so they shrivel up.  
\_\_\_\_\_
5. Yom! Something smells good. The neighbors are cooking on the grill. \_\_\_\_\_
6. Gargling with salt water when you have a sore throat causes your swollen throat cells to shrink and feel better. \_\_\_\_\_
7. Oxygen molecules move from the air sacs in the lungs across the cell membranes into the blood.
8. Robert sprays water on the veggies in the produce section to "plump them up".  
\_\_\_\_\_
9. You put raisins in a glass of water and they plump up. \_\_\_\_\_

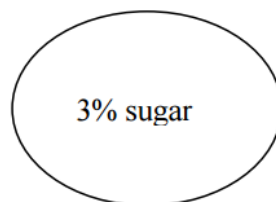
10. Use arrows to indicate the direction of diffusion in each case: ○ is a molecule that can pass through the cell membrane. □ is a cell membrane.



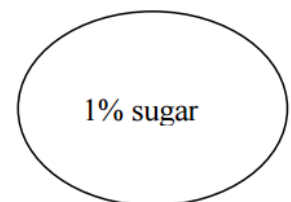
11. For each of the situations below use an arrow to indicate the net movement **of sugar** into or out of the cell. (Assume that the sugar molecules can pass through the cell membrane in each case.)



5% sugar



1% sugar



1% sugar

For questions 12-17, fill in the blank(s). The page number where you can find the answer is in ( ).

12. The cell membrane is made of a p\_\_\_\_\_ b\_\_\_\_\_ embedded with proteins. (72)
13. The cell membrane is \_\_\_\_\_ permable. This means that \_\_\_\_\_ (71)
14. Diffusion causes particles to move from a region of \_\_\_\_\_ concentration to a region of \_\_\_\_\_ concentration. (72)
15. Does a cell use energy when molecules diffuse in or out of the from a high concentration to a low concentration? \_\_\_\_\_ (72)
16. \_\_\_\_\_ requires energy to move molecules against the concentration gradient (from a low to high concentration). (74)
17. In \_\_\_\_\_ a carrier protein moved the molecule across the membrane. Is energy needed for this process? \_\_\_\_\_ (74)

Fill in this table. Write whether the substance moves *INSIDE* or *outside* of the cell by looking at the percentages of fluid on the inside and outside. Also, state whether it is an example of osmosis or diffusion.

|     | Does the substance move <b>INSIDE</b> or <b>OUTSIDE</b> of the cell? | Is this an example of <b>OSMOSIS</b> or <b>DIFFUSION</b> ? | Intracellular Fluid (fluid <b>INSIDE</b> the cell) | Extracellular Fluid (fluid <b>OUTSIDE</b> the cell) |
|-----|--|--|--|---|
| 18. |  |  | 5% salt  | 10% salt  |
| 19. |  |  | 3% glucose   | 1% glucose  |
| 20. |  |  | 2% Protein   | 1% Protein  |
| 21. |  |  | 10% salt   | 10% salt  |
| 22. |  |  | 13% water  | 25 % water  |
| 23. |  |  | 59% water  | 45% water   |
| 24. |  |  | 90% water  | 92% water   |
| 25. |  |  | 95% water  | 98% water   |