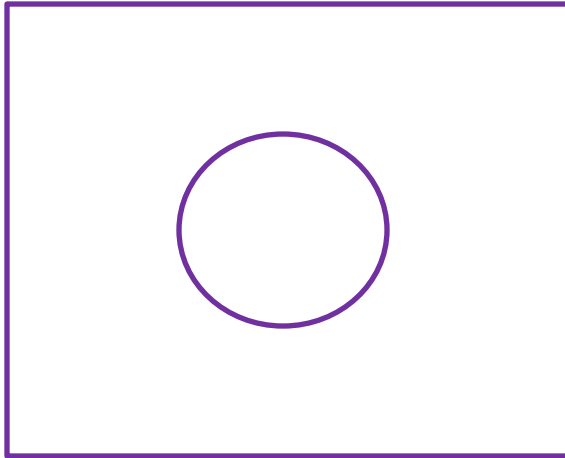


Osmosis Practice Problems

For questions 1-3: A cell which is 98% water is placed into the following environments. Answer each question and indicate whether each solution is hypotonic, isotonic, or hypertonic.

1. A solution of 100% water:

a. Complete the picture of the scenario.



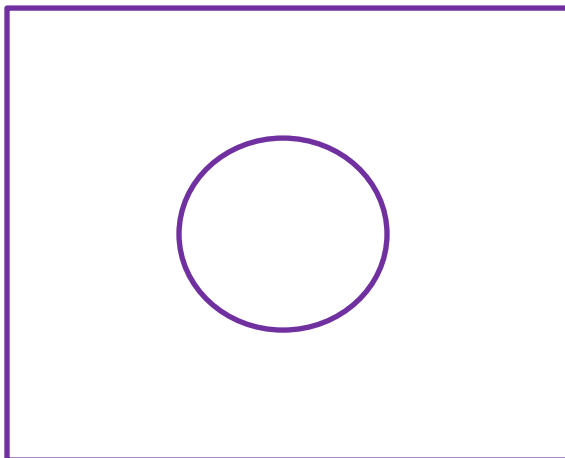
b. What is the direction of water movement? Indicate it with an arrow.

c. Does the cell shrink, swell, or remain the same?

d. Is this a hypotonic, hypertonic or isotonic solution? Explain your answer.

2. A solution of 10% sugar:

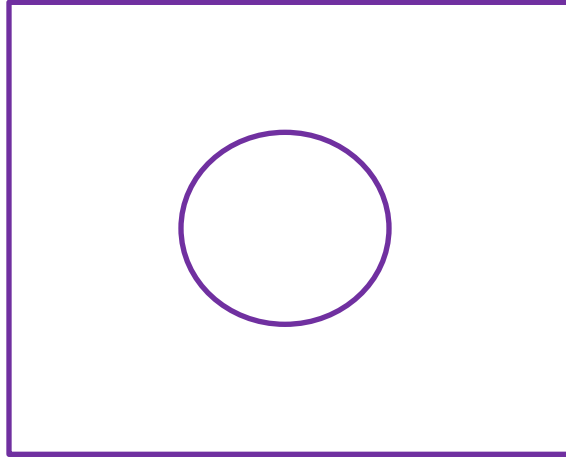
a. Complete the picture of the scenario.



- b. What is the direction of water movement? Indicate it with an arrow.
- c. Does the cell shrink, swell, or remain the same?
- d. Is this a hypotonic, hypertonic or isotonic solution? Explain your answer.

3. A solution of 2% sugar:

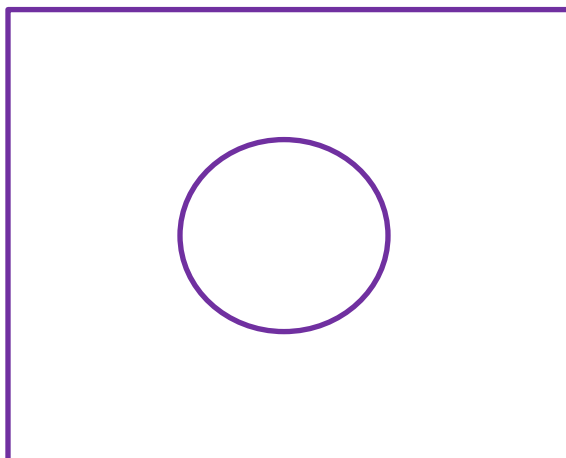
- a. Complete the picture of the scenario.



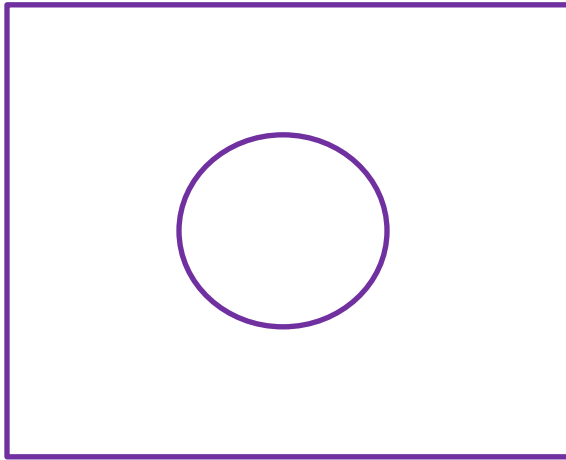
- b. What is the direction of water movement? Indicate it with an arrow.
- c. Does the cell shrink, swell, or remain the same?
- d. Is this a hypotonic, hypertonic or isotonic solution? Explain your answer.

4. Red blood cells are 95% water. Create several drawings to represent red blood cells in the following environments. Indicate the movement of water using arrows.

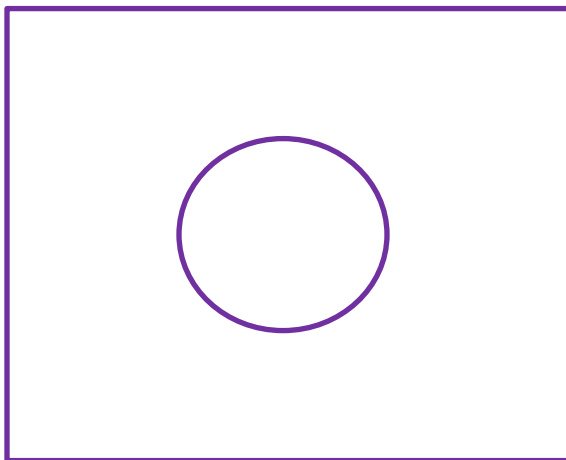
- a. 100% distilled water



b. 5% salt solution

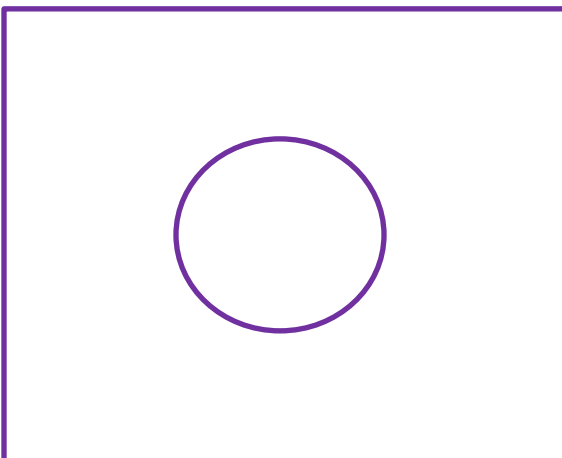


c. 15% salt solution



For questions 5-7, a cell which is 96% water is placed into the following environments. Answer each question and indicate whether each solution is hypotonic, hypertonic, or isotonic.

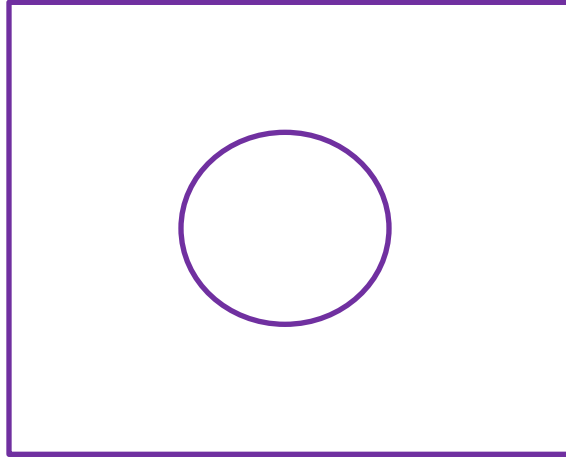
5. A solution of 4% sugar: Draw the scenario



- a. What is the direction of water movement? Indicate it with an arrow.
- b. Does the cell shrink, swell, or remain the same?
- c. Is this a hypotonic, hypertonic or isotonic solution? Explain your answer.

6. A solution of 2% sugar:

- a. Complete the picture of the scenario.



- b. What is the direction of water movement? Indicate it with an arrow.
- c. Does the cell shrink, swell, or remain the same?
- d. Is this a hypotonic, hypertonic or isotonic solution? Explain your answer