**Post Lab Questions: Calculation of Water Potential from Experimental Data**

*\*Staple this to the back of your lab before you turn it in (pre-Lab should be stapled to the front). Show all work (in pencil) and answer each question in complete sentences*

1. If a potato core is allowed to dehydrate by sitting in open air, would the water potential of the potatoes increase or decrease? Why?
2. If a plant cell has a lower water potential than its surrounding environment and if the pressure is equal to zero, is the cell hypertonic (in terms of solute concentration) or hypotonic to the environment? Will the cell gain or lose water? Explain.
3. You are stranded on a lifeboat with several other people in the middle of the ocean. You have run out of clean drinking water and are very thirsty. The others have started to drink the seawater to quench their thirst. Since you’re waiting for rescue (and are a top notch AP Biology student), you decide to solve a couple of water potential problems to determine if drinking sea water is a good idea or not. ☺
   1. The majority of dissolved ions in seawater is NaCl, roughly a 0.5M concentration. The ionization constant of NaCl is 2.0. Calculate the solute potential for seawater if you know that the water is 2°C.
   2. Your own cells have a 0.15M concentration. Calculate the solute potential for your own cells, knowing that body temperature is 37°C.
   3. Using your knowledge regarding water potential, if you drink the seawater, what will happen if a person drinks the seawater and it comes into contact with your body’s cells? *Note: ΨP for animal cells is zero.*
   4. Is drinking seawater a good idea for survival? What effect will drinking seawater have on you and your chances of surviving until you are rescued?
4. **Predict** the direction in which water will flow given the following information:

A student calculates that the water potential of a solution in a dialysis bag is equal to -6.25 bars (Ψs = -6.25, Ψp= 0). The water potential of a solution surrounding the bag is -3.25 bars (Ψs = -3.25, Ψp= 0). In which direction will water flow? **Justify** your answer.