OSMOSIS AND DIFFUSION LAB #2 NAME _____

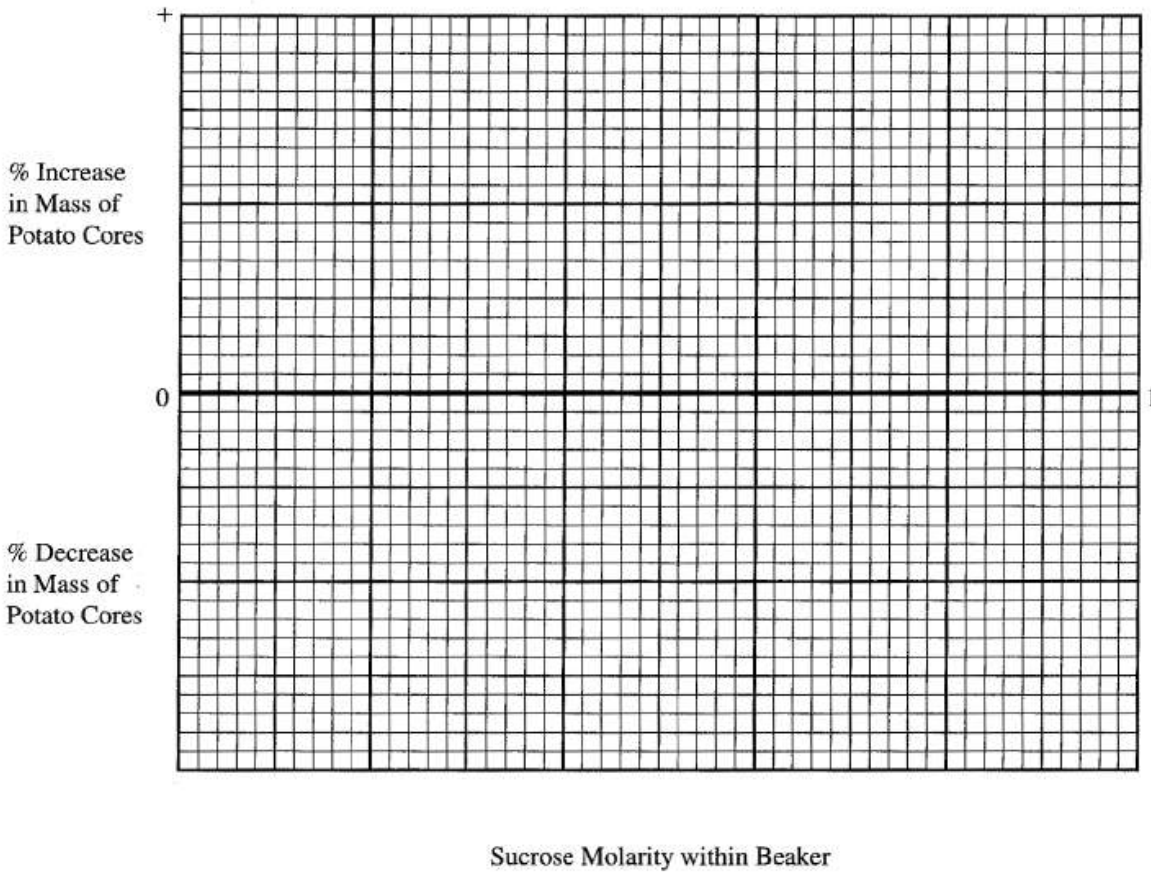
OSMOSIS WITH POTATO CORES

| Contents of beaker | Initial Mass | Final Mass | Mass Differences | Percent Change in Mass |
|---|---|---|---|---|
| 0.0 M (Distilled water) | | | | |
| 0.2 M Sucrose | | | | |
| 0.4 M Sucrose | | | | |
| 0/6 M Sucrose | | | | |
| 0.8 M Sucrose | | | | |
| 1.0 M Sucrose | | | | |

$$\% \text{ change in mass} = \frac{\text{Final} - \text{Initial}}{\text{Initial}} \times 100$$

CLASS DATA

GRAPH the class data




1. **EXPLAIN** why you calculated the percent change in mass rather than simply using the change in mass of the potato cores.

2. Determine the molar concentration of the potato core. This would be the sucrose molarity in which the mass of the potato core does not change. To find this draw a line that best fits your data. **The point at which this line crosses the x-axis represents the molar concentration of sucrose with a water potential that is equal to the potato tissue water potential.** At this concentration there is no net gain or loss of water from the tissue. Indicate this concentration of sucrose below.

Molar concentration of potato cores = _____ M

**3.Draw a diagram to show an initial beaker with potato cores in 0.2M sucrose.**
Use the water potential and solute potential equations to determine the $\Psi$ , $\Psi p$ and $\Psi s$ for both your cores and the beaker contents, **Describe** the direction the water will move *based on water potential*

**4. Summary Paragraph:** What did the data show? What is the relationship between % mass change in your potato cores and the sucrose concentration in the beakers? Explain what happened using words like hypotonic, hypertonic, isotonic, water potential, solute potential.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

5. **PREDICT** whether the water potential of the potato cells would decrease or increase if a potato core was allowed to dehydrate by sitting in the open air. EXPLAIN YOUR ANSWER

_____

_____