1) (2pnts) Fill in Table 1 and Table 2 with the data you collected for Part 1 of the lab. Be sure to enter the variable you chose in the heading for the third column in Table 1 and the second row in Table 2.

Table 1. Water loss for the plant in Room Conditions (Control) and the plant exposed to experimental variable.

Time (minutes)	**Plant in Room Conditions Reading (ml)**	**Plant in MIST Reading (ml)**
0	-0.1 mL	-0.15 mL
10	-0.05 mL	-0.13 mL
20	-0.03 mL	-0.13 mL
30	-0.02 mL	-0.13 mL
40	-0.01 mL	-0.13 mL

Table 2. Weight of leaves a of the two plants used in the experiment

Plant	**Weight of Leaves (g)**
Room Conditions(Control)	0.8 g
(Experimental)	0.5 g

2) (2pnts) You will need to control for the surface area of the leaves in the plants. To do this you will calculate the surface area. You can use the weight of the leaves to estimate the surface area using the formula below. Use the formula to calculate the total surface area and enter your results in Table 3. Be sure to enter your variable in the second row.

Estimation of Leaf surface area: Estimate the total leaf surface area for your plant by using the following formula:

$$\frac{\text{Weight of leaves (g)}}{1.6 \text{ grams/cm}^2} = \text{leaf area (cm}^2\text{)}$$

Table 3. Weight of leaves a of the two plants used in the experiment

Plant	**Surface Area (cm^2)**
Room Conditions(Control)	1.6 cm^2
(Experimental)	0.313 cm^2

3) (2pnts) Now that you determined the surface area of the leaves, you can calculate cumulative water loss per cm^2. This will control for the difference in surface area between the two plants. Use the following formula to calculate the cumulative water loss per cm^2 over time for both plants. Fill in Table 4 with your calculated cumulative water loss per cm^2. Be sure to enter your variable in the third column.

Determination of cumulative water loss per cm^2: Determine the cumulative water loss at times 10, 20, 30, and 40 per cm^2 by using the following formula:

$(T_n - T_o)$/leaf surface area

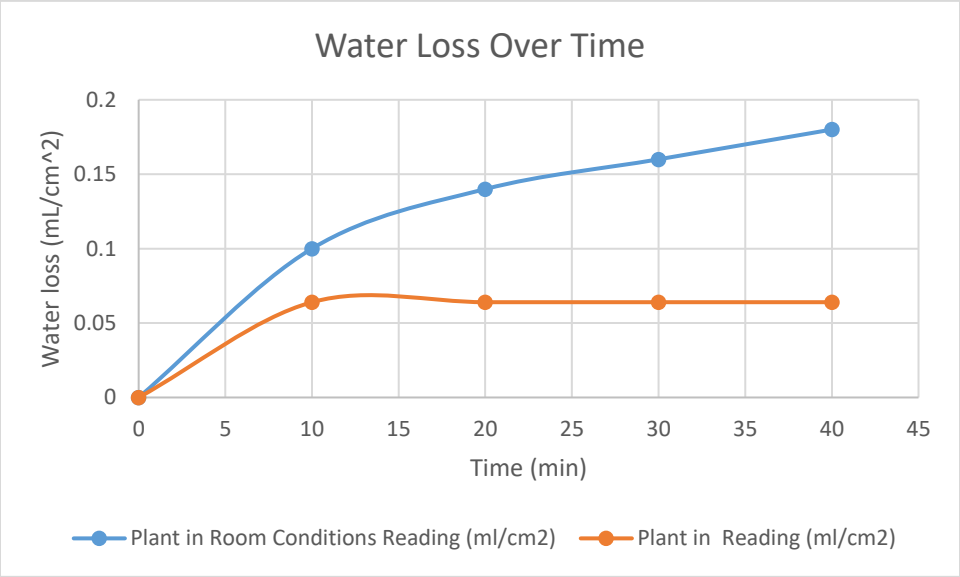
Where: T_n = reading at time n and T_o = reading at time 0 min

Table 4. Cumulative water loss for the plant in Room Conditions (Control)

and the plant exposed to experimental variable.

Time (minutes)	Plant in Room Conditions Reading (ml/cm^2)	Plant in Reading (ml/cm^2)
0	0	0
10	0.1	0.064
20	0.14	0.064
30	0.16	0.064
40	0.18	0.064

4) (2pnts) Create a graph (use scatterplot) that depicts the amount of water loss over time for both plants. Paste your graph below.



5) (3pnts) Which plant lost more water over time? Explain why this makes biological sense (or if your results are not what you expected, explain what you would have expected and why)?

- **The control plant lost the most water. Which means it had a better transpiration rate compared to that of the plant which endured an increased level of moisture. This happened because the leaves. From the control were not exposed to high moisture**

levels like they were in the "mist" environment. So that there was a water potential difference which caused the transpiration.

6) (2pnts) Explain how the variable chose affected the difference in water potential from the bottom to the top of the plant.

We did our experiment in increased moisture. This caused very low transpiration or no transpiration, due to the leaves being exposed to such an increased amount of moisture. Therefore, there was rare fluctuation there was not much of a difference in water potential between the stem or the leaves. So, the water was not moving from the xylem tissue to the leaves like it was in the control.

7) (2pnts) Fill in Table 5 with the results from your observations on the direction of flow in *Physarium*.

Table 5. The Direction of flow in a vein in *Physarum*

Time	Direction of flow in: Towards center out: away from center	Other observations
0 min		
2 min		
4 min		
6 min		

8) (3pnts) Was the direction of flow consistent? Explain why you got the results you did (From a biological perspective).

9) (2pnts) What did you observe when you added the oat flake?