Name: **Date:** **Class:**

Data Collection and Analysis Worksheet

Data Collection

Rotate your servo motor in controlled increments. At each angle, record the corresponding pressure value from the FSR using the Serial Monitor in Arduino IDE.

Servo Angle (°)	FSR Reading (Analog Value)	Observations (optional)

Add more rows if needed.

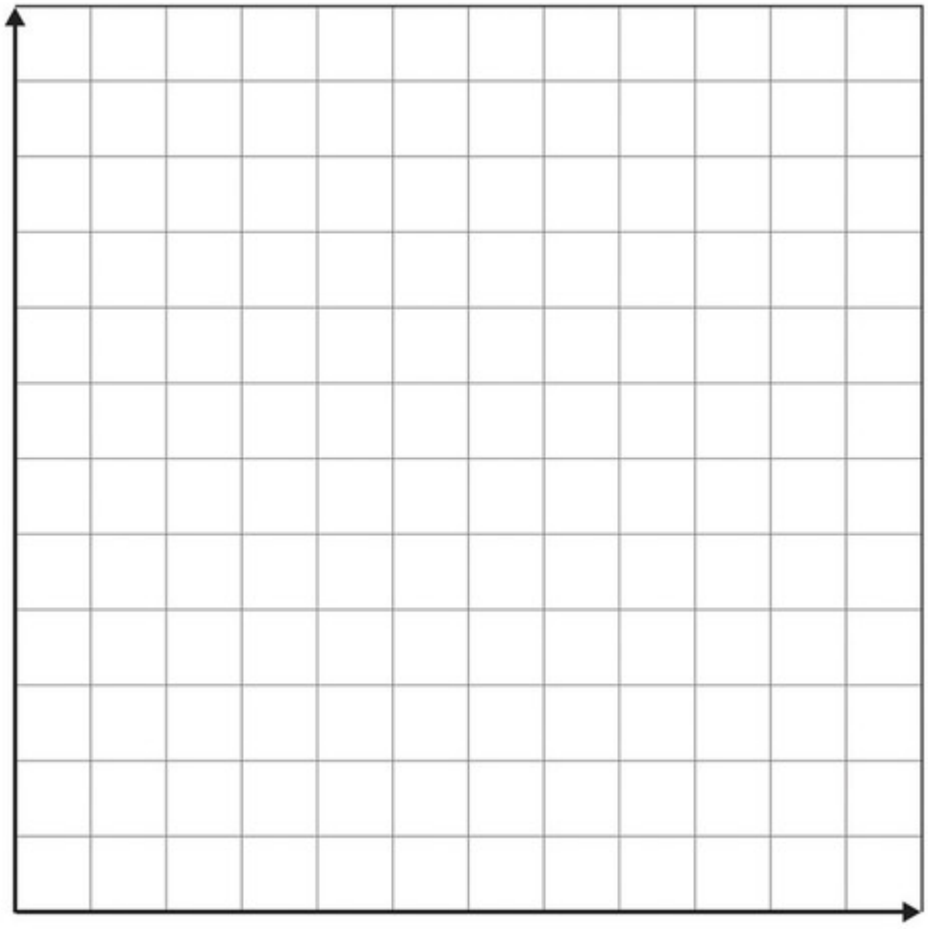
Name: **Date:** **Class:**

Graphing Your Data

Use Excel, Desmos, or a graphing calculator to create a scatter plot of your data:

- **x-axis** = Servo Angle (°)
- **y-axis** = FSR Reading (Pressure)

- Draw the scatter plot below. Provide accurate labels and units for each axis.



- Describe the shape of your graph (linear, quadratic, other):

Name: **Date:** **Class:**

- What type of regression best fits your data? (e.g., quadratic, exponential)

Analyze Your Graph

Answer the following questions based on your graph and regression model.

- What is the vertex (maximum pressure point) of your function?

  Angle: _____ ° Pressure: _____

- At which angle(s) is the pressure the lowest?

- What does the vertex represent in the context of your prosthetic hand?

- Why might the pressure decrease after a certain angle?

- Do you need to adjust your design based on the data? If so, how?

Name: **Date:** **Class:**

Reflection

- What did you learn about how mathematical models can explain the performance of a prosthetic system?

- How could real biomedical engineers use this kind of analysis to improve assistive technology?