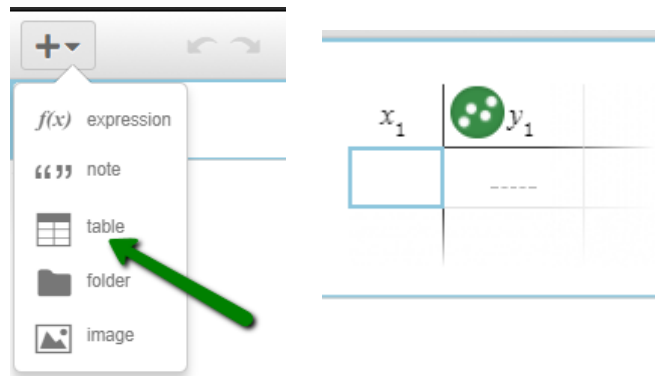# Regression Using Desmos

1. Enter the Data by adding a table

x_1 is the input data

y_1 is the output data

2. Create the regression equation

a. The overall syntax is:

$y_1\sim$ (function choice with any letter choice parameters a, b, c,…) and x_1 as the input variable

Samples:

Linear

$$y_1\sim ax_1+b \quad \text{or} \quad y_1\sim hx_1+z$$

Quadratic

$$y_1\sim ax_1^2+bx_1+c$$

Cubic

$$y_1\sim ax_1^3+bx_1^2+cx_1+d$$

Logistic

$$y_1\sim \frac{a}{\left(1+be^{(-cx_1)}\right)}$$

Quartic

$$y_1\sim ax_1^4+bx_1^3+cx_1^2+dx_1+f$$

**Do NOT use "e" as a parameter; desmos reserves "e" as 2.71828…
Use any other letter**

Exponential

$$y_1\sim a\cdot b^{x_1}$$

✓ Log Mode   **Click the "Log Mode" button**

Power

$$y_1\sim a\cdot x_1^b$$

The parameters and correlation coefficient will populate below the model of choice as shown:

STATISTICS   RESIDUALS

Correlation Coefficient $R^2=0.7857$ e_1 plot

PARAMETERS

$a=0.0959797$ $b=-0.422125$ **Model Parameters**

$c=0.107432$ $d=2.21871$