MA103: Mathematical Modeling
Intro to Predictive Analytics II **17 September 2025**

1. Be familiar with families of functions.
2. Get introduced to the idea of R^2.
3. Create a trendline in Excel and explore possible models with Excel.

Plot each data set and determine the appropriate function type:

(a) Data Set 1

x	y
1	2
2	4
3	6
4	8
5	10
6	12

(b) Data Set 2

x	y
1	1
2	4
3	9
4	16
5	25
6	36

(c) Data Set 3

x	y
1	1.00
2	0.50
3	0.33
4	0.25
5	0.20
6	0.17

What kind of real relationships could be modeled with these model types?

What is a **Predictive Analytics**?

In your project groups, consider the data set you've been given. Brainstorm as many predictive questions we could potentially answer using this dataset (3 minutes).

Travel with your group to the next board to your right. Pick two of the questions that the previous group developed and identify: the explanatory variables, the response variables, a prediction for the function that may model the data best (3 minutes).

Families of Functions:

Linear

Exponential

Polynomial

For each plot below, guess which continuous function would model the data best.

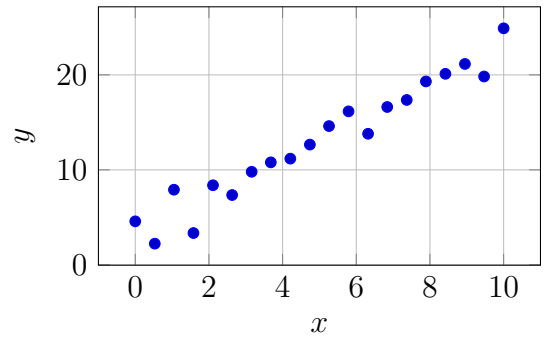

Figure 1

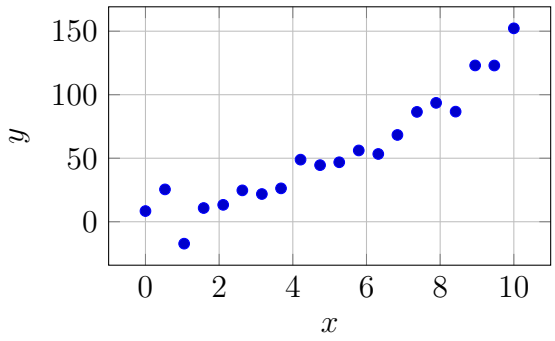

Figure 2

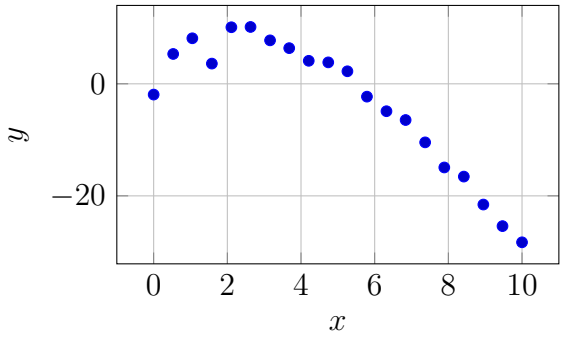

Figure 3

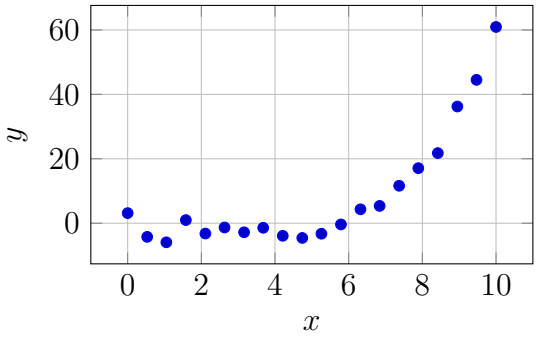

Figure 4

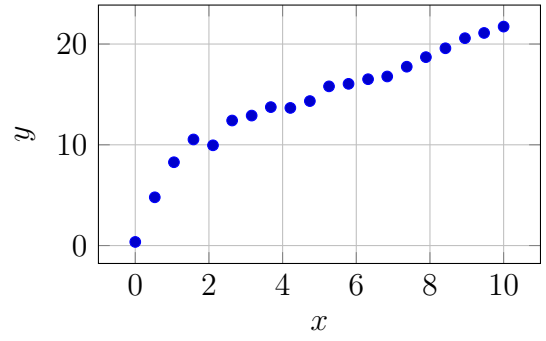

Figure 5

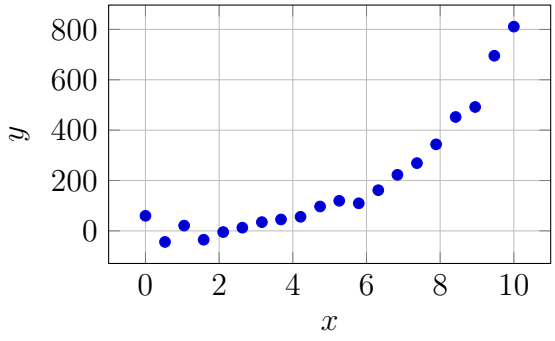

Figure 6