

Choosing Models

Given a description of some data, choose the most appropriate model from the following types of functions. For each kind of function, it will also be useful to have a rough idea of the shape of its graph.

- Linear: Section 2.2, Example 5 and Exercise 5
- Exponential: Section 3.1, Example 3 and Section 3.3, Example 2
(or see <https://www.youtube.com/watch?v=Pnl9LtHxAjU>) for a different technique)
- Logistic: Section 3.3, “Modeling Logistic Growth”
- Logarithmic: Section 4.3, Example 1 and Section 4.6, “Exponential and Logarithmic Functions as Inverse Functions”
- Quadratic: Section 5.4, Example 7
- Power: Section 6.2, Exercise 29 and Section 6.5, Example 2
- Polynomial: Section 6.3, Understand basic shape of polynomial functions, but you do not need to graph them by hand

Constructing Models

Construct a model for some data. You will be told which kind of function to use.

- Linear: Section 2.3, Example 6
- Exponential: Section 3.2, Example 5
(or see <https://www.youtube.com/watch?v=tKBHQ0pEHK4> for a different technique)
- Quadratic: Section 5.2, Example 9
- Power: Section 6.2, Example 3 and Section 6.5, Example 2
- Polynomial: Section 6.3, Example 6

Using Models

Extract some new information from a given function.

- Linear: Section 2.7, Example 2
- Exponential: Section 4.5, Example 7
- Logarithmic: Section 4.3, Example 2 and Exercise 17 (You do not need to memorize the formulas for pH, Richter magnitude, etc.)
- Quadratic: Section 5.3, Example 2 and Section 5.4, Example 8
- Power: Section 6.2, Example 6 and Section 6.5, Example 2