

Chapter 1.1: Linear Exercises

Calculus I

16 September 2024, College of the Atlantic

Time	People
8	92
12	85
16	78
20	71
24	64

- The above table of data gives the number of people in a poorly taught calculus class at a large university. The time is measured in days since the start of the class.
 - Is the function linear? How can you tell?
 - Make a rough sketch of the function.
 - Determine an equation describing this data.
 - State the meaning of every number and symbol in your equation. Give units.
 - Explain the meaning of the x-intercept of the function. You do not need to calculate its value.
 - Write a concise sentence that describes this function.
- Determine the equation of a line that passes through the points $(-2, 4)$ and $(3, 14)$.
- Determine the equation of a line that passes through the points $(-4, 8)$ and $(2, 8)$.
- Imagine¹ you are writing a Field Guide of Mathematical Functions. What are the “field markings” – i.e., useful identifying characteristics – for linear functions?
 - What does the graph of a linear function look like?
 - How can you tell if a function is linear by looking at a table of values?
 - What is the equation for a linear function?
 - If given a verbal description of a function, how can you tell if it is linear?

¹In fact, you don't have to imagine this. You *will* be making field guides to functions this term. More details coming up in lab.