Chapter 1.1: Linear Exercises
Calculus I
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.

1. Is the function linear? How can you tell?

2. Make a rough sketch of the function.

3. Determine an equation describing this data.

4. State the meaning of every number and symbol in your equation. Give units.

5. Explain the meaning of the x-intercept of the function. You do not need to calculate its value.

6. Write a concise sentence that describes this function.

A new bottle of wine is worth \$8.00. However, its value increases by \$3.00 every year after it has been bottled.

1. Complete the table below.

2. Write a formula for the function that describes the value of the bottle of wine. State the meaning of every symbol and number in the equation.

3. What is the meaning of the x-intercept of the function?

4. Make a rough sketch of the function.

Year	Value
0	
1	
2	
3	
4	

Imagine you are writing a Field Guide of Mathematical Functions. What are the "field markings" – i.e., useful identifying characteristics – for linear functions?

1. What does the graph of a linear function look like?

2. How can you tell if a function is linear by looking at a table of values?

3. What is the equation for a linear function?

4. If given a verbal description of a function, how can you tell if it is linear?