

FUNCTION HOMEWORK – HOMEWORK: GRAPHING*

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Abstract

This module provides practice problems designed to develop some concepts related to graphing.

The following graph shows the temperature throughout the month of March. Actually, I just made this graph up—the numbers do not actually reflect the temperature throughout the month of March. We're just pretending, OK?

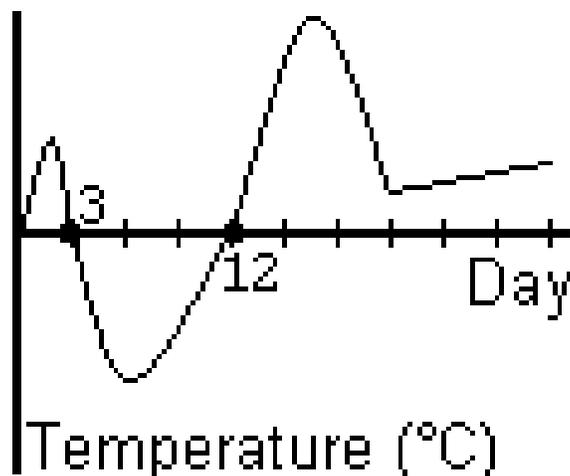


Figure 1

Exercise 1

Give a weather report for the month of March, in words.

Exercise 2

On what days was the temperature exactly 0°C ?

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Exercise 3

On what days was the temperature below freezing?

Exercise 4

On what days was the temperature above freezing?

Exercise 5

What is the domain of this graph?

Exercise 6

During what time periods was the temperature going up?

Exercise 7

During what time periods was the temperature going down?

Exercise 8

Mary started a company selling French Fries over the Internet. For the first 3 days, while she worked on the technology, she lost \$100 per day. Then she opened for business. People went wild over her French Fries! She made \$200 in one day, \$300 the day after that, and \$400 the day after that. The following day she was sued by an angry customer who discovered that Mary had been using genetically engineered potatoes. She lost \$500 in the lawsuit that day, and closed up her business. Draw a graph showing Mary's profits as a function of days.

Exercise 9

Fill in the following table. Then draw graphs of the functions $y = x^2$, $y = x^2 + 2$, $y = x^2 - 1$, $y = (x + 3)^2$, $y = 2x^2$, and $y = -x^2$.

x	x^2	$x^2 + 2$	$x^2 - 1$	$(x + 3)^2$	$2x^2$	$-x^2$
-3						
-2						
-1						
0						
1						
2						
3						

Table 1

Now describe in words what happened...

- How did adding 2 to the function change the graph?
- How did subtracting 1 from the function change the graph?
- How did adding three to x change the graph?
- How did doubling the function change the graph?
- How did multiplying the graph by -1 change the graph?
- By looking at your graphs, estimate the point of intersection of the graphs $y = x^2$ and $y = (x + 3)^2$. What does this point represent?