Functions

While working in a group make sure you:

- Expect to make mistakes but be sure to reflect/learn from them!
- Are civil and are aware of your impact on others.
- Assume and engage with the strongest argument while assuming best intent.

1. Determine which of the following rules below are functions.

    (a) Assign every house to its square footage.

    (b) Assign every house to the people that live in it.

    (c) The rule f with the table:

x	$f(x)$
-2	-7
-1	-5
0	-3
1	-1
2	1

    (d) The rule α takes an input element, triples it, and then subtracts 2 from the result.

    (e) The rule β defined by $\beta(x) = \pm\sqrt{x+2}$.

2. (Example F on page 601) Fourth graders at King Elementary School conducted an experiment to observe the rate at which water cools. They placed a thermometer in a beaker of water and heated the water to boiling. They recorded the water temperature every minute until the temperature dropped to just below 168° F. Then they plotted the results on the grid like the one below.
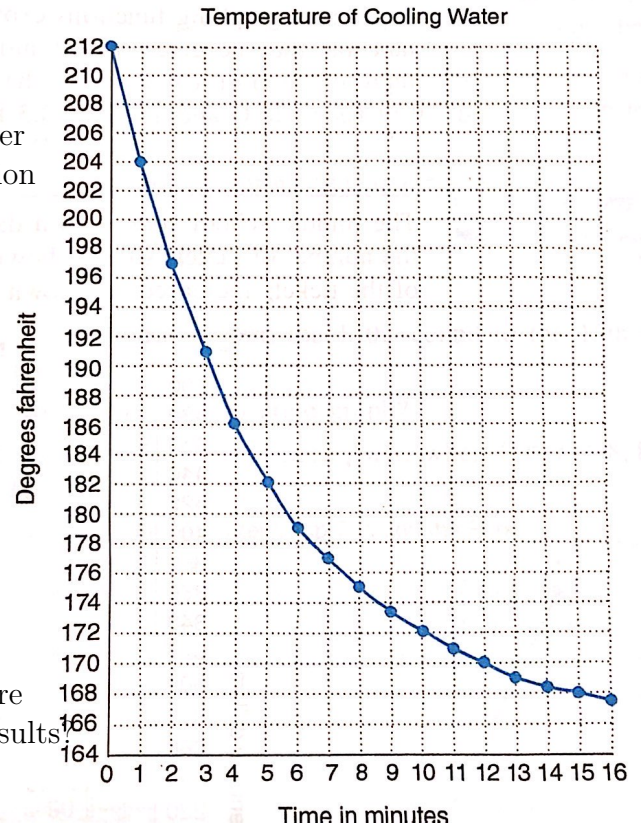
(a) What was the temperature 4 minutes after boiling?

(b) Let t represent the time since the water was boiling and f represent the function which returns the temperature of the water at time t. Find $f(4)$.

(c) Find $f(10)$.

(d) How many degrees did the temperature drop during the first minute?

(e) How many degrees did the temperature drop in the last minute of recorded results?

Temperature of Cooling Water

Degrees fahrenheit

Time in minutes

(f) How long did it take for the water temperature to drop below 204°F?