Objective: Interpret an inverse function from an algebraic, numerical, graphical, and verbal perspective and extract information relevant to the phenomenon modeled by the function.

Example A: Consider the data below which represents the conversion between several temperatures. Given the following data table, find:

Temperature (in degrees)	Lowest Temperature Recorded on Earth**	Freezing Point of Water	Hottest Temperature Recorded on Earth*	Boiling Point of Water
Fahrenheit (x)	-128.6	32	134	212
Celsius C(x)	-89.2	0	56.7	100
Kelvin K(C(x))	183.8	273	329.7	373

*https://www.guinnessworldrecords.com/world-records/highest-recorded-temperature
**https://wmo.asu.edu/content/world-lowest-temperature

1. Find C (32).

2. Find C (134).

3. Find C^{-1}(100).

4. Find K(C(212)).

5. Find the average rate of change of C(x) from 32 to 212. Write a linear function using (32, 0) and (212, 100). What would this represent?

6. What are the x and y intercepts for this linear function and what is the practical meaning?

Review of Difference Quotient

The difference quotient measures the average rate of change between any two points on a function. It is the same as finding the slope which we saw above.

7. Let's look at the question above, using the difference quotient.

Additional examples:

Given $f(x) = x^3 + 2x^2 - 4x + 9$, find the following and simplify.

8. $f(x + h)$

9. $f(x + h) - f(x)$

10. $\frac{f(x+h)-f(x)}{h}$