Objective 1: I can envision a function as two variables changing with each other.

I can envision a function as two variables changing with each other by answering questions about:
- Functions as both changing magnitudes and changing quantities
- Secant lines and average rates of change
- Tangent lines and instantaneous rates of change
- Describe functions as constant, increasing, or decreasing at a point or over an interval
- Whether the rate of change of a function is positive or negative and whether a rate of change of a function is itself increasing, decreasing, or constant.
- Find the average rate of change over [x,x+h].

Objective 2: I can describe what a function is doing at one point.

I can describe what a function is doing at one point including finding:
- The zeros of a function
- The x-intercepts of a function
- The initial values of a function
- The y-intercepts of a function
- The value of x if I'm given any value of y
- The value of y if I'm given any value of x
- The point on the graph of a function if I'm given any the value of either x or y
- The hole in the graph of a function

I will be able to do this for a variety of types of functions given in a variety of representations (as equations, graphs, tables, and verbal descriptions).

Objective 3: I can describe what a function is doing over an interval.

I can describe what a function is doing over an interval including finding:
- The domain and range of a function
- Where a function has local and global extrema
- The increasing/decreasing and concave up/concave down intervals of a function
- The equations of asymptotes, end behavior, and limits

Objective 4: I can create a precise graph for a function represented with an equation.

I can create a precise graph for a function represented with an equation using
- Transformations of parent functions
- The x-intercepts of a polynomial
- The intercepts and asymptotes of a rational function
- A piece-wise defined linear function.

Objective 5: I can rewrite an equation used to define a function.

I can rewrite an equation used to define a function using the following techniques:
- Expanding
- Factoring
- Completing the square
- Canceling a common factor
- Using exponent laws
- Using log laws
- Using trig identities

Objective 6: I can use function algebra.

I can use function algebra to create and analyze new functions by:
- Creating a new function from other functions' equations using function sums, differences, products, quotients, and compositions and simplify its equation
- Describing the behavior, at one point, when a function is created using function sums, differences, products, quotients, and compositions when functions are given as equations, graphs, or tables.
- Create a function that is the inverse of another function from the function's equation or graph
- Describing the behavior, at one point or over an interval, of an inverse function when a function is given as an equation, graph, or table.
- Select function algebra operations to create a new function in an application scenario.

Objective 7: I can use inequalities to analyze functions.

I can use inequalities to analyze functions by:
- Describing whether a function is less than, less than or equal to, greater than, and greater than or equal to zero.
- Describing whether a function's rate of change is less than or greater than zero.
- Describing whether a function is above or below the x-axis.
- Finding the domain of a radical and logarithmic function.

And I can create a sign diagram to help me work with non-linear inequalities.

Objective 8: I can perform and understand transcendental operations.

I can perform and understand transcendental functions which include trigonometric operations:

- Setting up a trig ratio for an acute angle in a right triangle for a given trig operation and use this equation to find a missing measure in a right triangle (Right Triangle Trig Definition)
- Analyzing an angle of rotation drawn in standard position including:
  - Using degree and radian measure
  - Finding coterminal angles
  - Finding reference angles and triangles
- Setting up a trig ratio for an angle of rotation drawn in standard position based on a point (x,y) on the terminal side of the angle. (The X-Y-R Definition)
- Setting up a trig ratio for an angle of rotation drawn in standard position based on the point where the terminal side of the angle intersects the edge of the unit circle. (Unit Circle Definition)
- Using the Pythagorean theorem in the context of all three definitions of trig functions

And exponential and log operations:

- Switching between exponential and logarithmic form
- Describe the meaning of different parts of an exponential and logarithmic expressions
- Computing exponential and logarithmic operations