Answer the following questions in the space provided. Your solutions must be well organized and legible.

1. Evaluate the function $f(x) = 3x^2 - 3x + 1$ at the given values. (4 marks)

   $f(-1)$=

   $f(3)$ =

   $f(4) - f(0)$ =

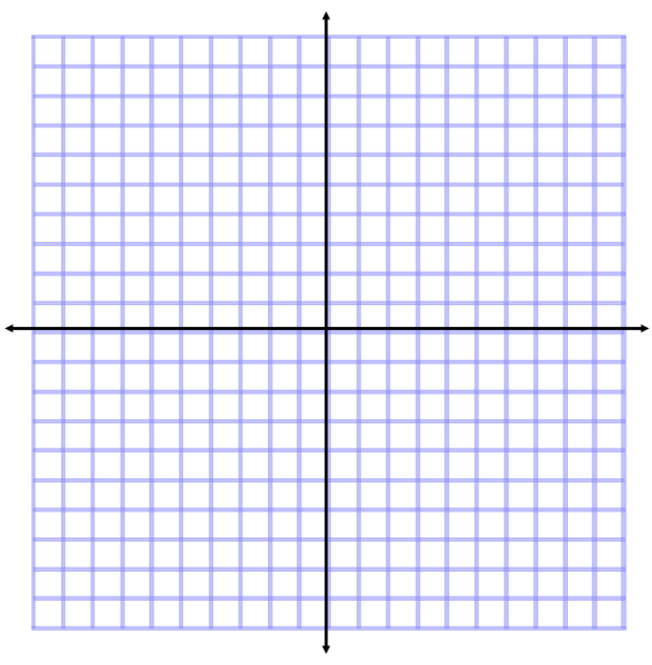
2. Describe the transformations of the function $y = 0.5|4x - 16| + 9$. (4 marks)

3. List the domain and range of each function below (make a sketch to help). (4 marks)

   (a) $f(x) = \frac{1}{x-5} + 6$ (b) $g(x) = 3\sqrt{x+1} - 4$

4. (a) Graph the given parent function below **and** then graph the INVERSE on the same graphing insert. Label please! (7 marks)

   $y = 2(x+3)^2 - 6$

   (b) What is the equation of the new INVERSE function?

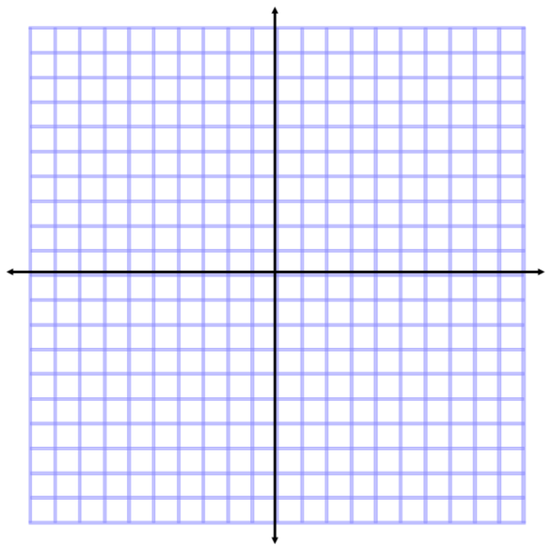
Graph the following functions on the grid attached. Include the following:

(i) State and graph the parent function

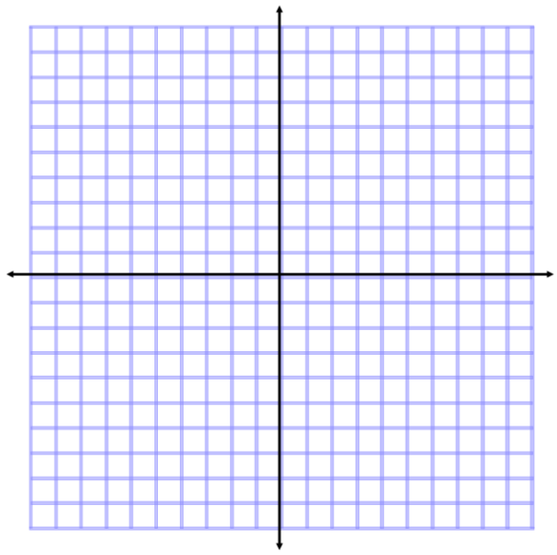
(ii) a written description of the transformations applied to the parent function

(iii) at least three accurately transformed points (includes the asymptotes as well)

(a) $y = 4\frac{1}{(x-6)} - 3$



(b) $y = -\frac{1}{2}|x - 5| - 4$



(c) $y = -\sqrt{-x + 6} + 5$