Transformations Quiz[1]   Name:

1. Given the function, $f(x) = x^3$, state the function $g(x)$ which will translate $f(x)$ five units to the left and seven units upward.

$$g(x) = \underline{\hspace{3in}}$$

2. The function $y = \dfrac{1}{x}$ is graphed. Then the function $y = \dfrac{1}{(x-4)} - 9$ is graphed on the same grid. Explain how the two graphs will compare. *(Explain both similarities and differences)*

3. Given the function $y = f(x)$, State the type of reflection caused by each of the following conditions. Also state the invariant points in each case.

   a. $y = -f(x)$ Type of reflection:
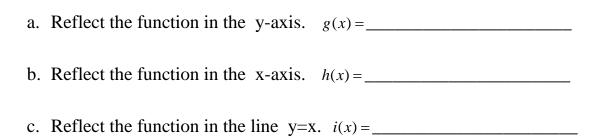

   Location of invariant points:

   b. $y = f(-x)$ Type of reflection:

   Location of invariant points:

   c. $x = f(y)$ Type of reflection:

   Location of invariant points:

4. Given $f(x) = x^2 + 3$, state the function or relation which will cause each of the following transformations to occur.

   a. Reflect the function in the y-axis. $g(x) =$ _____

   b. Reflect the function in the x-axis. $h(x) =$ _____

   c. Reflect the function in the line y=x. $i(x) =$ _____

   Which of the reflected graphs above will not produce a function?

5. Given that $y = f(x)$ is the function pictured on the grid below. Sketch the graph of $y = f(-x) + 2$ on the same grid