Name:

QUIZ 15 – MATH IB HL

1. (37%) Given the point (10, 12):, write down the location of point A after each one of the transformations:

   a. (9%) $f(x) \rightarrow f(-x)$ _____

   b. (9%) $f(x) \rightarrow 3f(2x)$ _____

   c. (9%) $g(x) \rightarrow -g(x - 5)$ _____

   d. (10%) Given that $f(x) = 3 - 2(x + 12)^2$

      a. (1%) Write down its axis of symmetry: _____
      b. (9%) Find the axis of symmetry after the transformation $-f(\frac{2x}{3})$

2. (20%) The graph of the function $f(x) = -2x^2 - x^3 + x + 1$ is translated to its image, $g(x)$, by the following transformations:

   a. (10%) The vector $\begin{pmatrix} 5 \\ -3 \end{pmatrix}$. Write an expression for $g(x)$ after this transformation.

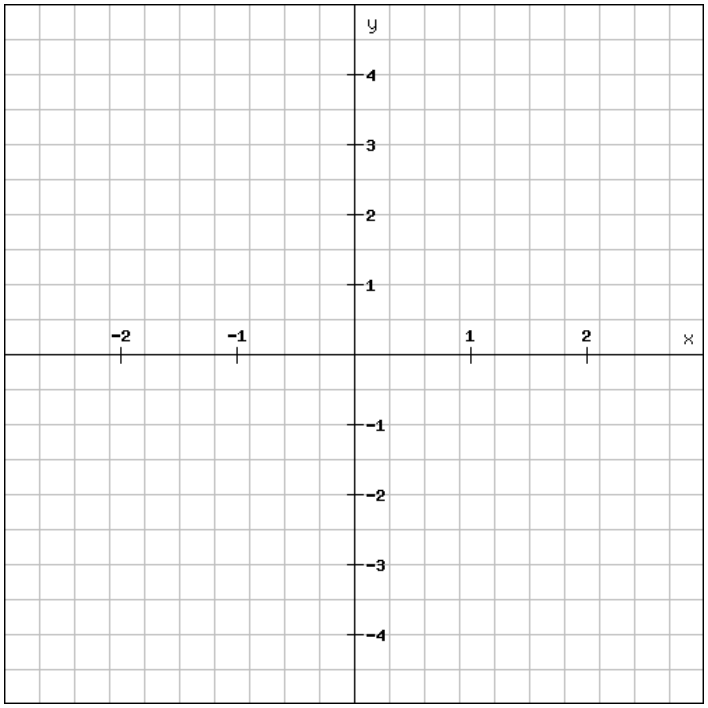
   b. (10%) Horizontal dilation factor 0.2 Write an expression for $g(x)$ after this transformation.

3. (15%) Let $f(x) = 2(x - 1)^2 + 2$

(a) (6%) On the grid below draw the graph of $f(x)$ for $0 \le x \le 2$

(b) (9%) $g(x) = 0.5f(-x)$. On the grid draw the graph of $g(x)$ for

$-2 \le x \le 0$



4. (5%) Given the function $f(x) = \frac{x-1}{x^4}$, is this function even, odd or neither? Explain your answer.

5. (5%) Given the function $f(x) = x^{33} - x^{12} + x - x^2$ Write the reflection of this function in the x axis: _____.

6. (18%) Given the function f(x) as seen in the graph:

a. (9%) On the same graph make a precise sketch of the function 2f(-x)

b. (9%) On the same graph make a precise sketch of the function f(3x) + 2