

Math 111 Quiz #7 Answers

1. Neither because $f(-x) = -7x^5 + 3$, which is not equal to $f(x)$ nor is it equal to $-f(x)$.
2. (a) $-g(x)$ is the reflection of $g(x)$ over the x -axis. We obtain this by multiplying our y -values by -1 . So if $(6, -2)$ is a point on $g(x)$, then $(6, 2)$ is a point on $-g(x)$.

(b) $g(3x)$ is $g(x)$ compressed horizontally by a factor of $\frac{1}{3}$. We obtain this by multiplying our x -values by $\frac{1}{3}$. So if $(6, -2)$ is a point on $g(x)$, then $(2, -2)$ is a point on $g(3x)$.
3. (a) To obtain this graph, reflect $h(x)$ over the y -axis and then shift the graph up by 1. So, the formula would be $h(-x) + 1$.

(b) To obtain this graph, vertically stretch $h(x)$ by a factor of 2. So, the formula would be $2h(x)$.
4. Using the vertex formula, the x -coordinate of the vertex is $x = \frac{-b}{2a} = \frac{-4}{2(-2)} = 1$.

The y -coordinate is $-2(1)^2 + 4(1) + 5 = 7$. So, the vertex is the point $(1, 7)$.

Given that the parabola will open down (because of the negative coefficient of x^2), we have that the range is $y \leq 7$ or $(-\infty, 7]$.