

Math 111 Quiz #3 Answers

1. (a) Since $f(1) = 5$, $g(f(1)) = g(5) = -2$.

(b)
$$\begin{aligned} f(g(x)) &= f(3-x) \\ &= 4(3-x)^2 + 3-x \\ &= 39 - 25x + 4x^2 \end{aligned}$$

2. The function $h(x)$ is shown below. Find the following.

(a) $h(0) = 4$

(b) $h^{-1}(0) = 3$ (since $h(3) = 0$)

(c) $h(h(3)) = h(0) = 4$ (since $h(3) = 0$)

3. (a) $t^2 + 4t - 12 = 0 \quad \Rightarrow \quad t = 2 \text{ or } t = -6$ (Can factor or use the quadratic formula)

(b) $2x^2 - 2x - 1 = 0 \quad \Rightarrow \quad x = \frac{1 \pm \sqrt{3}}{2}$ (Using the quadratic formula)