Name: **Date:** **Quiz 2** **Precalculus - Hargus**

1. Find the domain and the range of the function, and also state any the equations for any vertical or horizontal asymptotes, if there are any.
   (a) $f(x) = x^2 + 2$
   (b) $f(x) = -\sqrt{4 - x^2}$
   (c) $f(x) = \frac{1}{x-2}$

2. Find the inverse function $f^{-1}(x)$ for the function $f(x) = x^3 + 3$.

3. Let $f(x) = x^2 + 1$ and $g(x) = \sqrt{x}$.
   (a) What is $(f + g)(4)$?
   (b) What is $(fg)(4)$?
   (c) What is $(f \circ g)(x)$? What is its domain?

4. True or False
   (a) The function $f(x) = x^2 + 1$ is bounded above.
   (b) The function $f(x) = \frac{1}{x-1}$ has a vertical asymptote at $x = 1$.
   (c) The function $f(x) = x^3$ is odd.
   (d) The function $f(x) = x$ is odd.