Answer the questions in the spaces provided. **Show all of your work and circle the answer you would like to have graded for each question.**

Name and section:_____

1. Given $f(x) = x^2 - 3$ and $g(x) = \sqrt{x+2}$, compute $(f+g)(2)$ and $(f \circ g)(2)$.

2. Find the inverse function of $f(x) = 5x^3 - 8$.

3. Given positive real numbers x and y whose sum is 10, maximize the quantity xy.