Quiz 7a. Math 10-270. March 28, 2012.   Name

1. Consider the function $f(x) = \sqrt{4 - x^2}$. Find its derivative and sketch its graph.

2. Use the graph of $f(x) = \sqrt{4 - x^2}$ to evaluate the integral $\int_{-2}^{2} \sqrt{4 - x^2}\, dx$.

3. Explain the meaning of the integral $\int_{-2}^{2} \sqrt{1 + \frac{x^2}{4 - x^2}}\, dx$ by referring to the graph of $f(x) = \sqrt{4 - x^2}$. Then evaluate the integral.