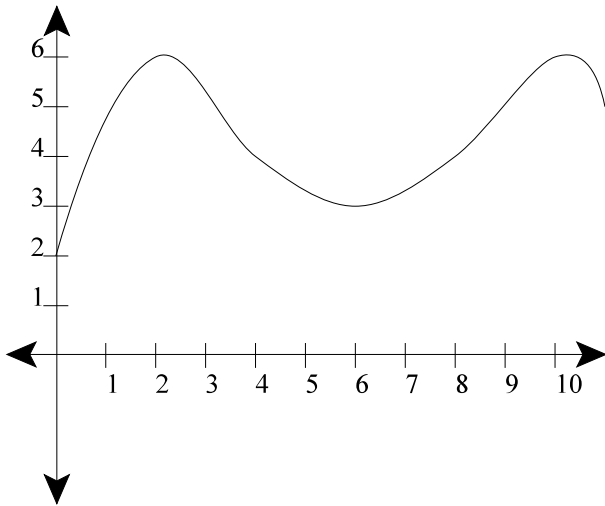


Quiz 11 Calculus 1 11/18/2002

Each problem is worth 5 points. Show complete justification for full credit.

1. By reading values from the graph of $f(x)$ below, use three rectangles to find an upper estimate and a lower estimate for the area under the graph of $f(x)$ but above the x axis between $x=0$ and $x=6$.



2. Use the midpoint rule with $n=4$ to approximate $\int_2^4 \sqrt{64 - x^3} dx$. [You don't need to simplify your answer – things like $\sqrt{64 - (2\frac{1}{4})^3}$ are perfectly acceptable here.]