QUIZ 7
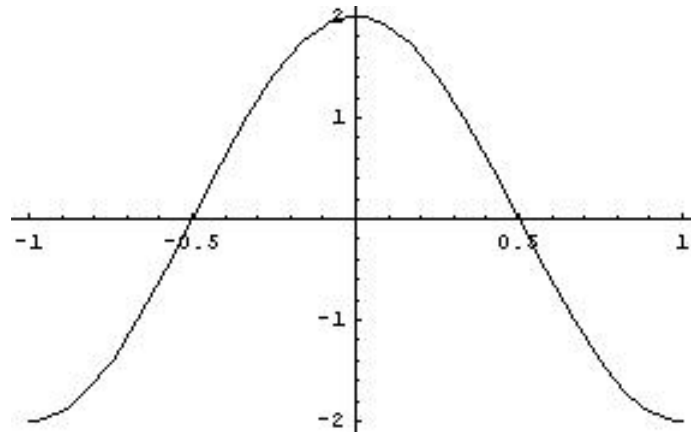
Instructions: Complete the following problems. You may use the derivative shortcuts developed in class to answer these problems, though you are encouraged to show as much work as possible so that partial credit may be awarded.

(1) (30 pts) For a particular function $f(x)$, we know only that $f(0) = 7$ and that the graph of $f'(x)$ is

Use this information to estimate the value of $f(.1)$. **Be sure to show your work.**

(2) (20 pts) Approximate ln(1.1) using the techniques developed in class.

(3) (50 pts) You are to make a box with an open top that has a volume of 10 cubic meters. The length of the base should be twice the width of the base. Material for the base will cost $15 per square meter, and material for the sides will cost $2 per square meter. *Find the cost of the materials for the cheapest such container.*