Math 105 - Quiz 3 - September 25, 2006

Instructions: Show all of your work and circle your final answers. Calculators are allowed, but notes and books are not.

1. (10 pts.) Consider the function \( f(x) = x^2 - 1 \). Using the limit definition of the derivative \( f'(a) \), calculate \( f'(3) \).
2. (10 pts.) For some function \( g(x) \), the graph of \( y = g'(x) \) is shown below. (Note: This is NOT the graph of \( y = g(x) \).)

(a) For what value(s) of \( x \), if any, does \( g \) have a local maximum?

(b) For what value(s) of \( x \), if any, does \( g \) have an inflection point?