Quiz 5

Student ID Number: Name _____
Math 140B, 5PM
Please justify all your answers   February 21, 2019
Please also write your full name on the back

1. Suppose that f is differentiable on an open interval I containing the point b and that $f'(b) < 0$. Show there are numbers a and c with $a < b < c$ such that $f(a) > f(b) > f(c)$.

2. Find the Taylor polynomial of order 3 centered at zero, $P_3(x)$, of $f(x) = \sinh x = \frac{1}{2}(e^x - e^{-x})$. Find an upper bound for the remainder, $|f(x) - P_3(x)|$, at $x = 1$.