

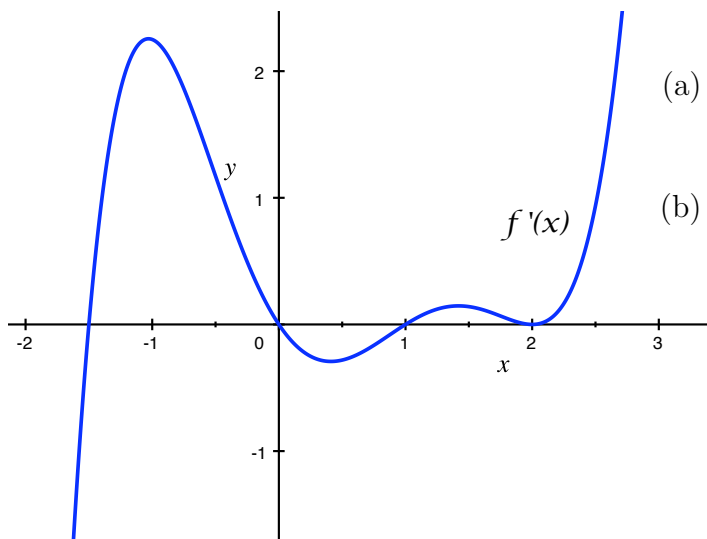
Calculus I - Math 124 Homework #9 - due Wednesday 11/28

- **Book Problems** (Not to be turned in, but still important):

- §4.2: 1-7 (Odd), 11, 13, 18, 21, 25, 30, 31, 34
- §4.3: 1-8, 9-15 (Odd), 22, 31, 33-43 (Odd), 63, 67, 81 (We will finish this section during week 10.)

- **Problems to hand in:**

1. Find the absolute maximum and minimum values of $F(x) = 2e^{-x} - e^{-6x}$ on the interval $[0, 2]$.
2. Find a function $f(x)$ for which the graph goes through the point $(0, -2)$ and the derivative is $6e^{2x} + 5$.
3. Does there exist a continuous and differentiable function g such that $g(1) = 5$ and $g(4) = -10$ with $g'(x) \geq -4$ for all x ? Explain.
4. Find the local maximum and minimum values of $h(x) = \sqrt{x} \ln\left(\frac{x}{7}\right)$ using the First Derivative Test.
5. The following is a graph of the derivative function $f'(x)$.



- (a) On what intervals is $f(x)$ increasing? On what intervals is $f(x)$ decreasing?
- (b) At what values of x does f have a local maximum or minimum?