Math-13 Sections 01 and 02

Homework #10

Due: Midnight 11/3

Consider the function:

$$f(x) = x^{\frac{2}{3}} - x$$

on the closed interval $[0, 8]$.

1. Determine $f'(x)$.
2. Determine the critical points on the interval.
3. Calculate $f(x)$ at each endpoint and critical point.
4. Determine where $f(x)$ is increasing and decreasing over the interval. You must prove your result by evaluating the derivative at proper test points. Summarize this information with a real number graph.
5. Classify each endpoint and derivative critical point as either a relative/absolute minimum/maximum or point of inflection.
6. Sketch the graph on the interval. Be very specific near $x = 0$.