

First and Second Derivative Analysis

Given $f(x) = x^4 - 4x^3$, find:

a) The interval on which f is increasing and the interval on which f is decreasing;

b) The local extrema;

c) The point(s) of inflection;

d) Where the graph of f is concave up and where it's concave down.

Sketch the graph from the information above.