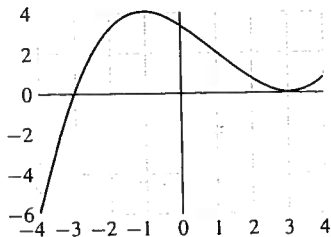


Name: _____

Show all work, clearly and legibly, to receive full credit. Correct spelling, organization of your solution, and proper use of mathematical notation all count. You may use a stand-alone graphing calculator, but not any internet-based calculators. No notes, books, or other additional resources are permitted. Good luck!

- 1.) (4 pts.) The graph of f' is shown below. Note: **This is not the graph of f .** Use the graph of f' to answer the question: Where does f have a local minimum? Explain how you know this from the graph of f' .



- 2.) (4 pts.) Let $f(x) = \sin x$.

a.) For $x = 1.38$ and $x = 1.42$, compute $f(x)$.

b.) Use your answers from part (a) to show that $f'(1.4)$ is approximately 0.17. (Notice you are given the estimate, and are being asked to show the steps that justify the estimate.)

- 3.) (2 pts.) Simplify by writing an equivalent expression having no parentheses: $-(3xy)^2$.