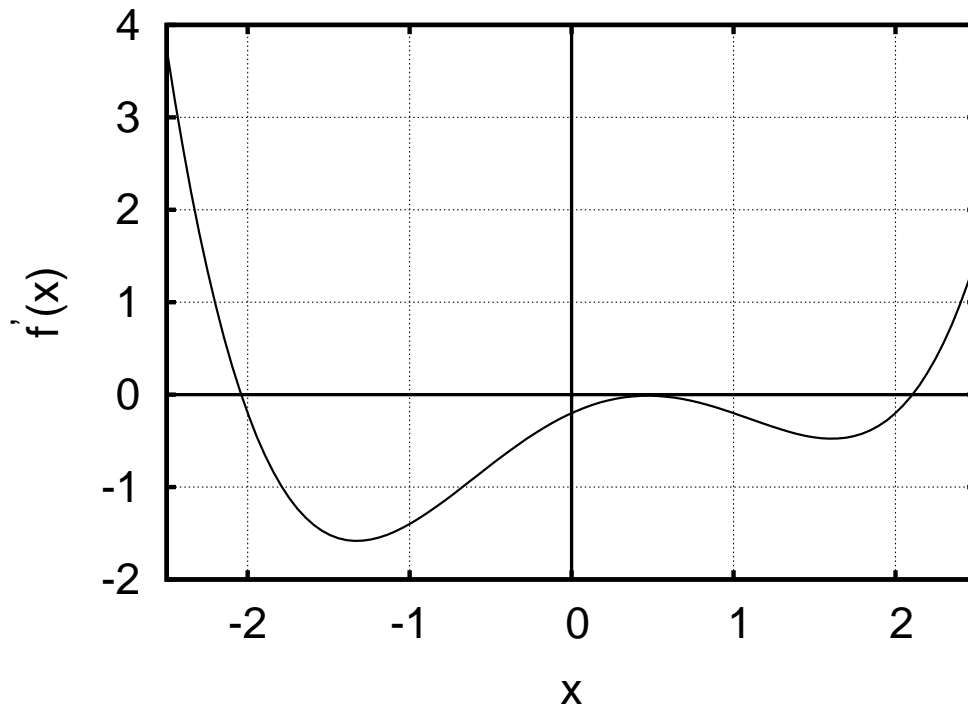


Using the Derivative: Minima and Maxima

1. Analyze the following function. Find and classify all critical points. Find all inflection points. Determine any local maxima or minima (x and y values). Sketch the function.

$$g(x) = -x^2 + 6x - 5. \quad (1)$$

2. In the figure is show a plot of a function's derivative. Find and classify all critical points. Find any inflection points. Sketch $f(x)$.



3. Analyze the following function. Find and classify all critical points. Find all inflection points. Determine any local maxima or minima (x and y values). Sketch the function.

$$h(x) = x + \sin(x) \quad (2)$$

4. Suppose you can chose any two numbers, so long as they add up to 8. What should those two numbers be to make their product is as large as possible?