D. Graphing \(f, f'\)

It is particularly instructive to plot the graphs of \(f\) and \(f'\) on the same screen and note how the features of \(f'\) are reflected in the graph of \(f\) -- and vice versa. Trace along the graph of \(f'\) until the cursor is as close to a zero of \(f'\) as possible. Press the up arrow to move the cursor to the graph of \(f\). There should be a local extremum or an inflection point.

One way to highlight the features is to draw vertical lines (see Section 10.D) through the points where \(f'(x)=0\) or \(f'(x)\) does not exist. This divides the x-axis into intervals on which the derivative has a constant sign and allows easy comparison with the graph of \(f\) on these intervals.

You can also plot \(f''\) and \(f\) on the same screen. You could even do all three but this creates a lot of clutter.