

Follow all the formatting guidelines from Writing Project 0.

SHOW ALL WORK. USE A LEGEND AND LETTER LABELS TO LABEL KEY POINTS, AS DEMONSTRATED IN CLASS. CIRCLE FINAL ANSWERS AND IMPORTANT ‘SUB-ANSWERS.’

See Guidelines for a Complete Graph in Calculus I for guidance. I’m looking for intercepts, local and absolute extrema, inflection points, concavity (visual), and asymptotes. Hopefully, I’ve prepared you for the ideal way to capture the general shape in a hand sketch.

I’m looking for more than just nice sketches. I’m looking for the supporting calculus work. Show that, first. Then do the graph based on the work you did.

1. (10 pts) Sketch the graph of the polynomial $f(x) = 3x^3 - 5x^2 - 48x + 80$.
2. (10 pts) Sketch the graph of the function $g(x) = \sin(2x) + x$ on the interval $[0, 2\pi]$. These functions don’t generally lend themselves to a nice, clean method for finding x -intercepts, but this one’s pretty easy.
3. (10 pts) Sketch the graph of $R(x) = \frac{x^2 - 3x - 28}{x - 1}$.