

Activity 9

We've now seen how to find, classify, and use the local extrema of a function. This activity will help give us some extra practice doing so. For each function below, use calculus to determine the (i) critical points, (ii) intervals where the function is increasing or decreasing, (iii) local extrema, (iv) intervals where the function is concave up or concave down, and (v) inflection points. Then (time permitting), (vi) sketch a rough graph of each function.

1. $f(x) = x^6 - 10x^4 + 50$

2. $g(x) = (5 - x^2)e^{-x/2}$