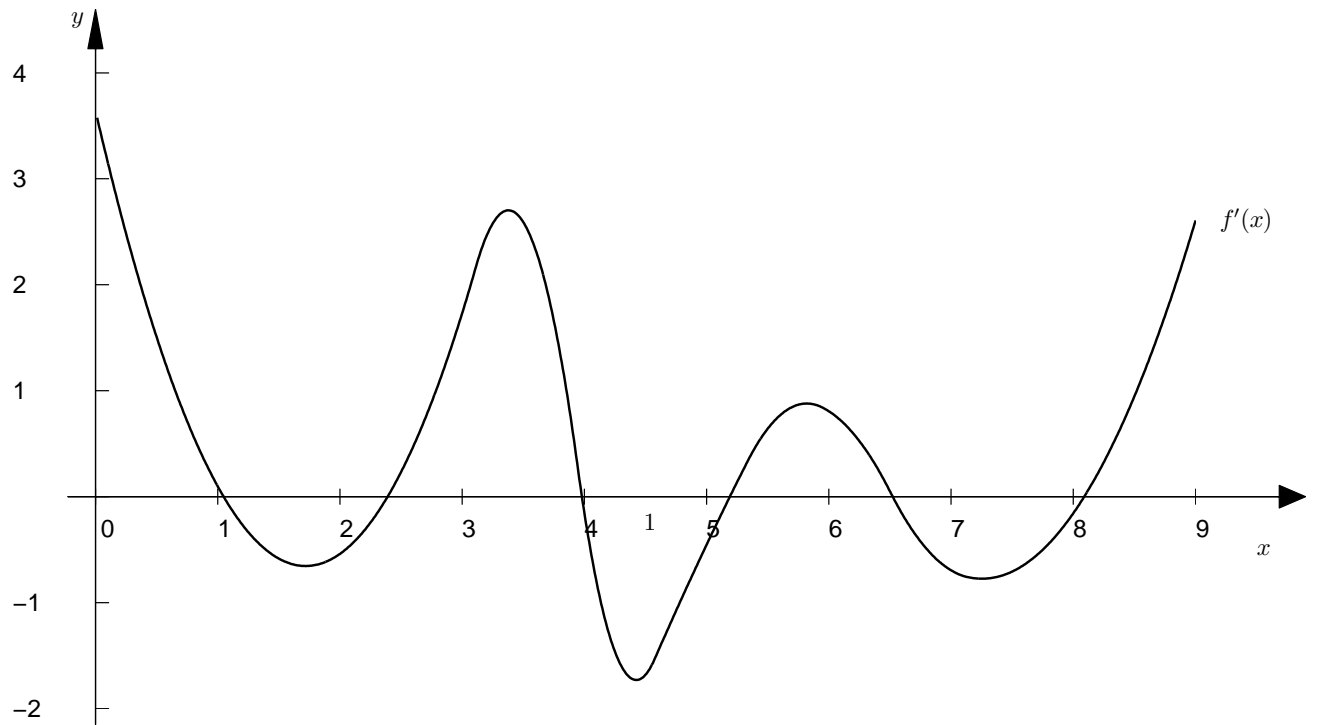
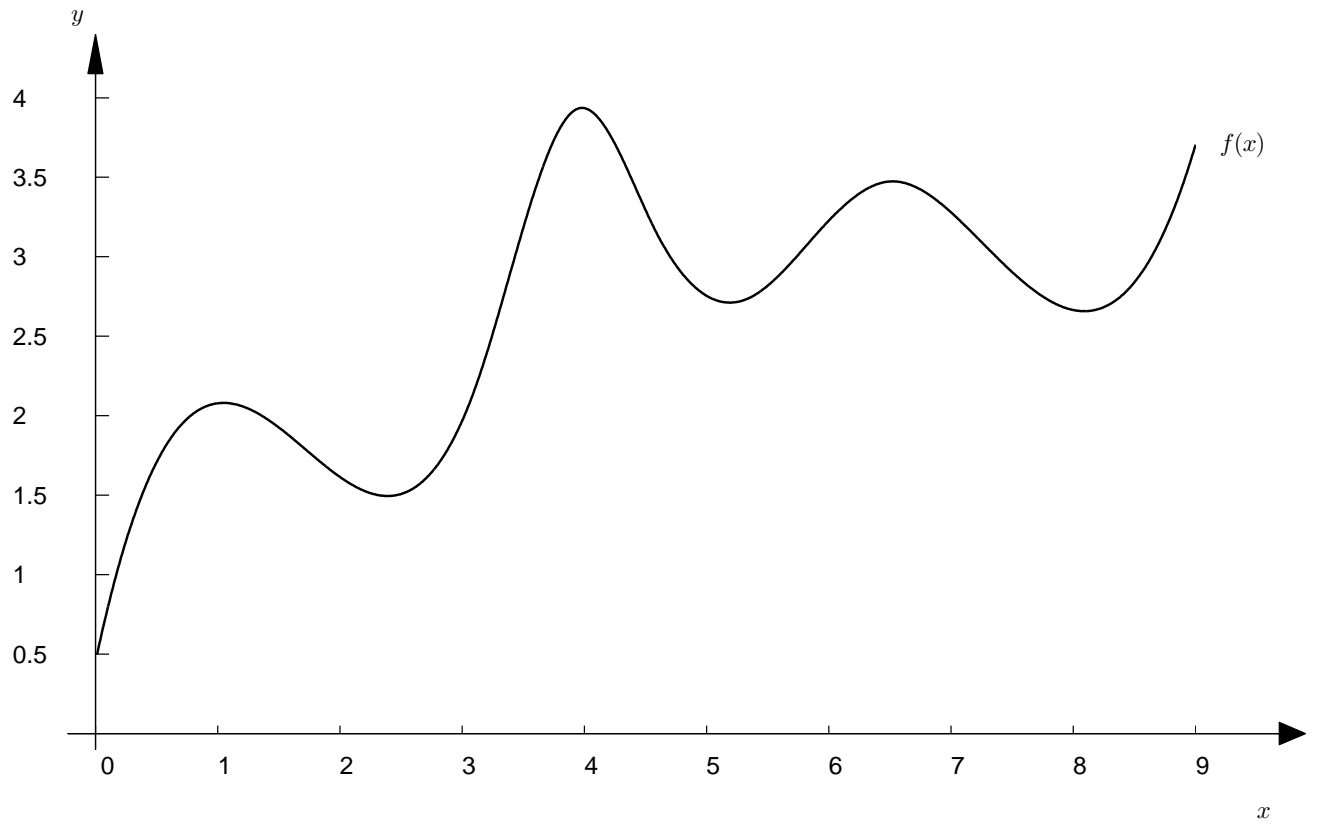


Names: _____

1. For the graph of f and its derivative on the next page do the following:
 - (a) Mark the zeros of f' and the local extrema of f ;
 - (b) Mark the local extrema of f' and the inflection points of f ;
 - (c) Between each of the extrema of f' , label the sign of f'' ;
 - (d) Label the intervals where f is concave up and concave down;
 - (e) At each of the zeros of f' , label the sign of f'' on the graph of f ;
 - (f) Classify the local extrema of f ;
 - (g) Determine the absolute extrema of f ;



2. Let $f(x) = (x^2 - 1)^3$. Find the following: (a) the intervals where f is increasing and decreasing; (b) the local extrema of f , including their type and location; (c) the intervals of concavity; (d) the x-coordinates of the points of inflection.

3. Let $f(x) = x\sqrt{x^2 + 1}$. Find the following: (a) the intervals where f is increasing and decreasing; (b) the local extrema of f , including their type and location; (c) the intervals of concavity; (d) the x-coordinates of the points of inflection.