Notes/HW56 **Name _____**

(3.2) The Derivative as a Function

1. $f(x) = \frac{1}{4}x^4 - x^3 - \frac{1}{2}x^2 + 3x + 5$

a) Find the derivative function.

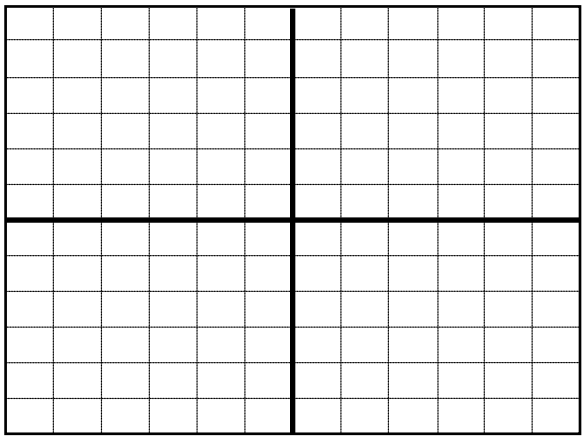
b) Find the critical values.

c) State the critical points.

d) Use a sign line graph to figure out the positive/negative forms of the derivative.

d) Sketch the derivative function.

f) Sketch the original function using the derivative graph.



2. $f(x) = \frac{x^3}{3} - x^2 - 3x + 1$

a) Find the derivative function.

b) Find the critical values.

c) State the critical points.

d) Use a sign line graph to figure out the positive/negative forms of the derivative.

d) Sketch the original function using the critical values, end behavior, and y-intercept.

f) Sketch the derivative function using the original function graph.