Math 220-02 Take-home quiz

Curve sketching.

1.) $f(x) = \frac{3}{2}x^4 - 2x^3 - 6x^2 + 8$

Describe the end behavior of the polynomial (use arrows)

$f'(x) =$

Critical values:

Show sign analysis on a number line ~~and~~ to give intervals where f is increasing or decreasing. (FDT)

From your sign analysis, determine whether each critical value is the site of a local max, min, or neither.

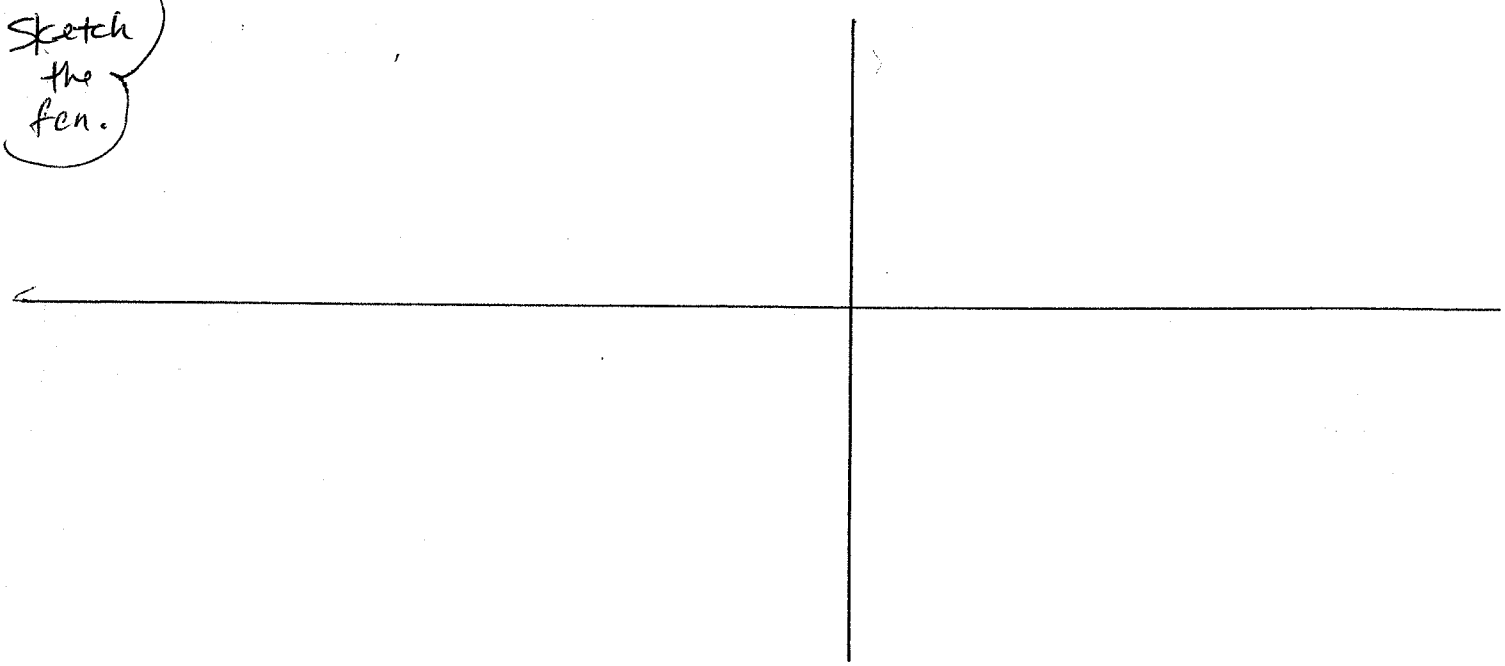
$f''(x) =$

Show by evaluating $f''(x)$ at each value of c that your determination of the local extremes is right. (sign analysis of $f''(c)$)

On what intervals is $f(x)$ concave up? concave down? (SDT)

What are the points of inflection? (x values only)

Sketch the fcn.



(2) $f(x) = (x-4)^2$

Find the absolute max & min of the fcn on the closed interval $[0,6]$. Show all your work.

(3) $f(x) = \dfrac{2x-1}{x+2}$

VA:

HA:

$f'(x) = \dfrac{5}{(x+2)^2}$

$f''(x) = \dfrac{-10}{(x+2)^3}$

f increases on the interval

f decreases on the interval

f is concave up on the interval

f is concave down on the interval

Sketch the fcn.