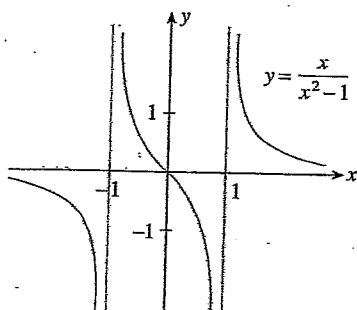


## Quiz 6 (4.3 Curve Sketching &amp; 4.4 Absolute Extrema)

Name \_\_\_\_\_

For problems 1-4 find the horizontal and vertical asymptotes of the graph of the function.

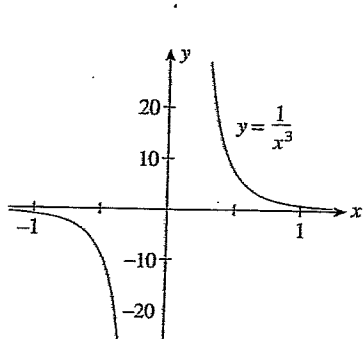
1.



Horizontal asymptote(s) \_\_\_\_\_

Vertical asymptote(s) \_\_\_\_\_

2.



Horizontal asymptote(s) \_\_\_\_\_

Vertical asymptote(s) \_\_\_\_\_

For problems 3 & 4 Find the horizontal and vertical asymptotes of the graph of the function. (You need NOT sketch the graph.)

3.  $f(x) = (x - 2) / (x + 2)$

Horizontal asymptote(s) \_\_\_\_\_

Vertical asymptote(s) \_\_\_\_\_

Numbers 4-8 all deal with sketching the graph of

$f(x) = x^3 - 3x + 1$  where you'll ultimately sketch the graph

4. Determine the intervals where  $f$  is increasing and where  $f$  is decreasing

$f$  is increasing in the interval(s) \_\_\_\_\_

$f$  is decreasing in the interval(s) \_\_\_\_\_

5. Find the relative extrema of  $f(x) = x^3 - 3x + 1$

The relative extrema are points (\_\_\_\_, \_\_\_\_); (\_\_\_\_, \_\_\_\_)

6. Determine the concavity of the graph of  $f(x) = x^3 - 3x + 1$

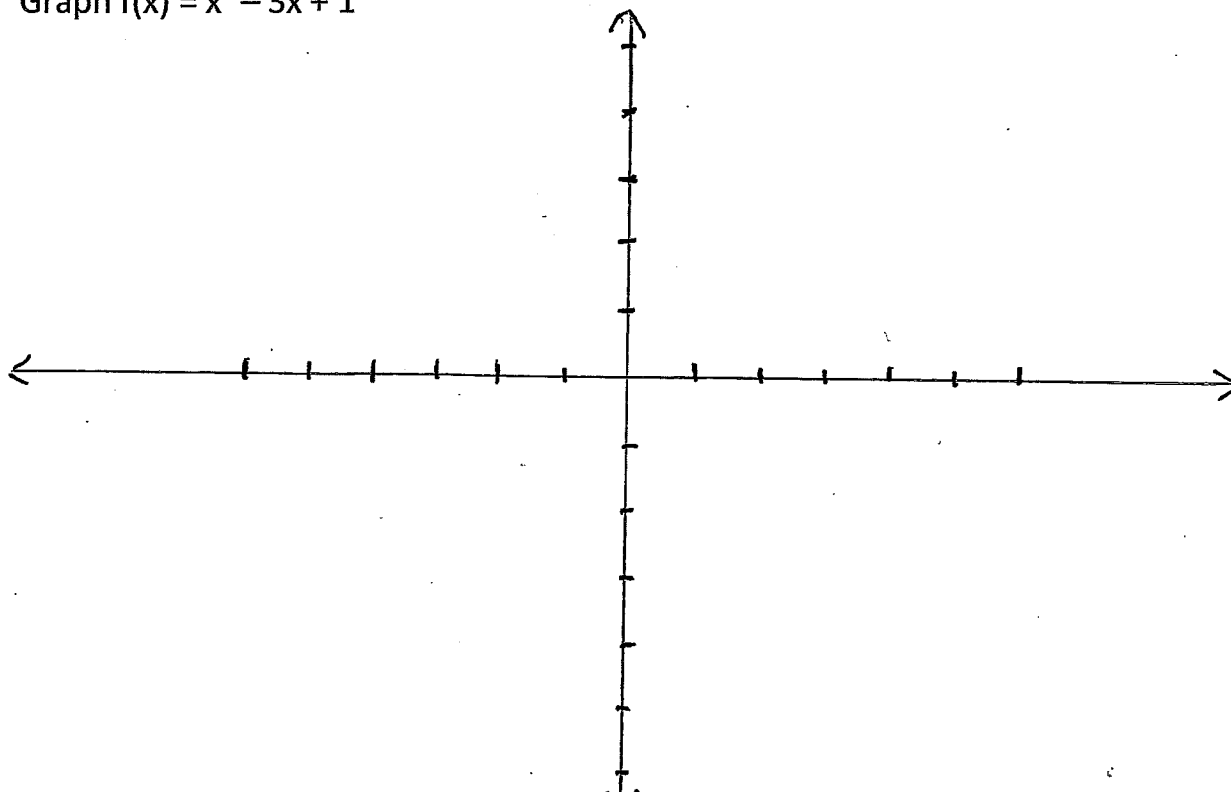
Concave upward on the interval (      ,      )

Concave downward on the interval (      ,      )

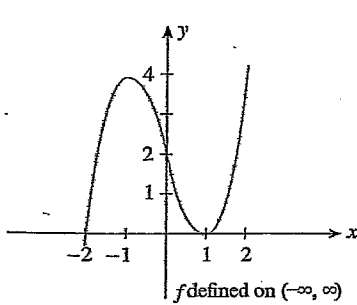
7. Find the inflection point of  $f(x) = x^3 - 3x + 1$

Inflection point (      ,      )

8. Graph  $f(x) = x^3 - 3x + 1$



9. Find the absolute minimum and the absolute maximum of the graph of a function  $f$  defined on the indicated interval.



absolute maximum value \_\_\_\_\_

absolute minimum value \_\_\_\_\_

Find the absolute maximum value and the absolute minimum value of the function.

10.  $f(x) = x^3 + 3x^2 - 1$  on  $[-3, 2]$

absolute maximum value \_\_\_\_\_

absolute minimum value \_\_\_\_\_