

$g(x) = (x+1)(x^2+1)$

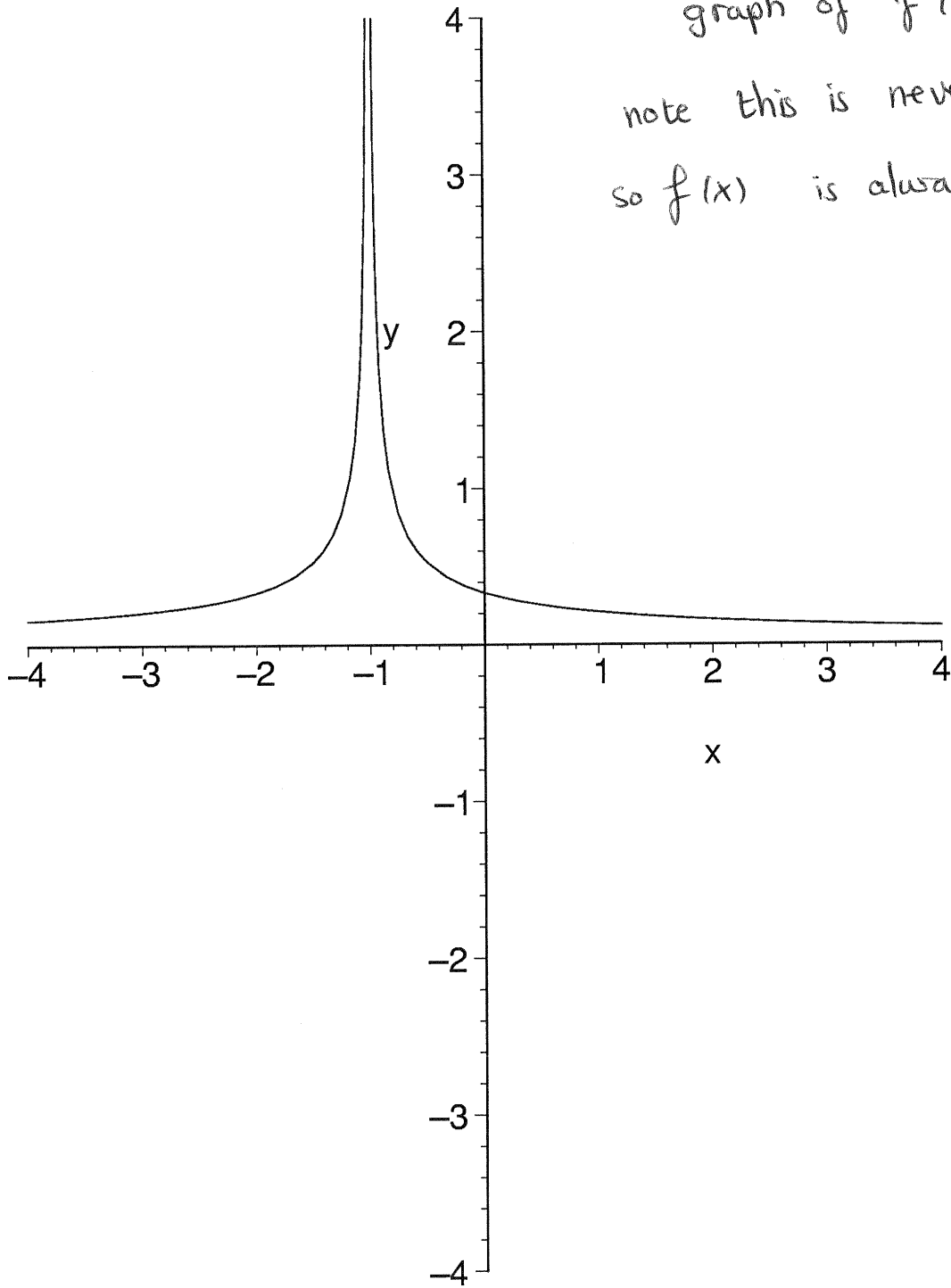
intercepts $(0,1), (-1,0)$
no asymptotes.

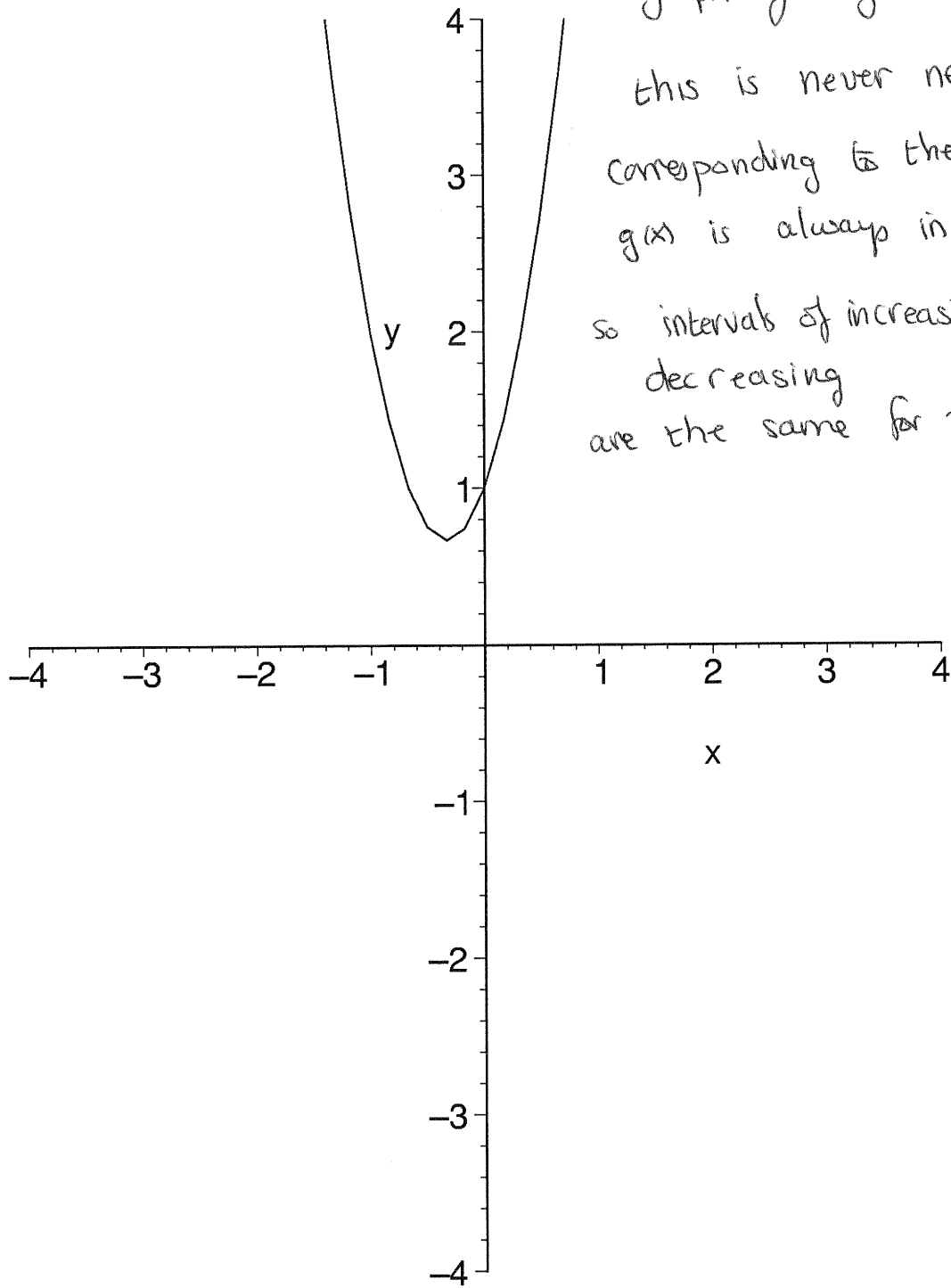
How is $g(x)$ different from $f(x)$?

3

graph of $f'(x)$

note this is never negative,
so $f(x)$ is always increasing

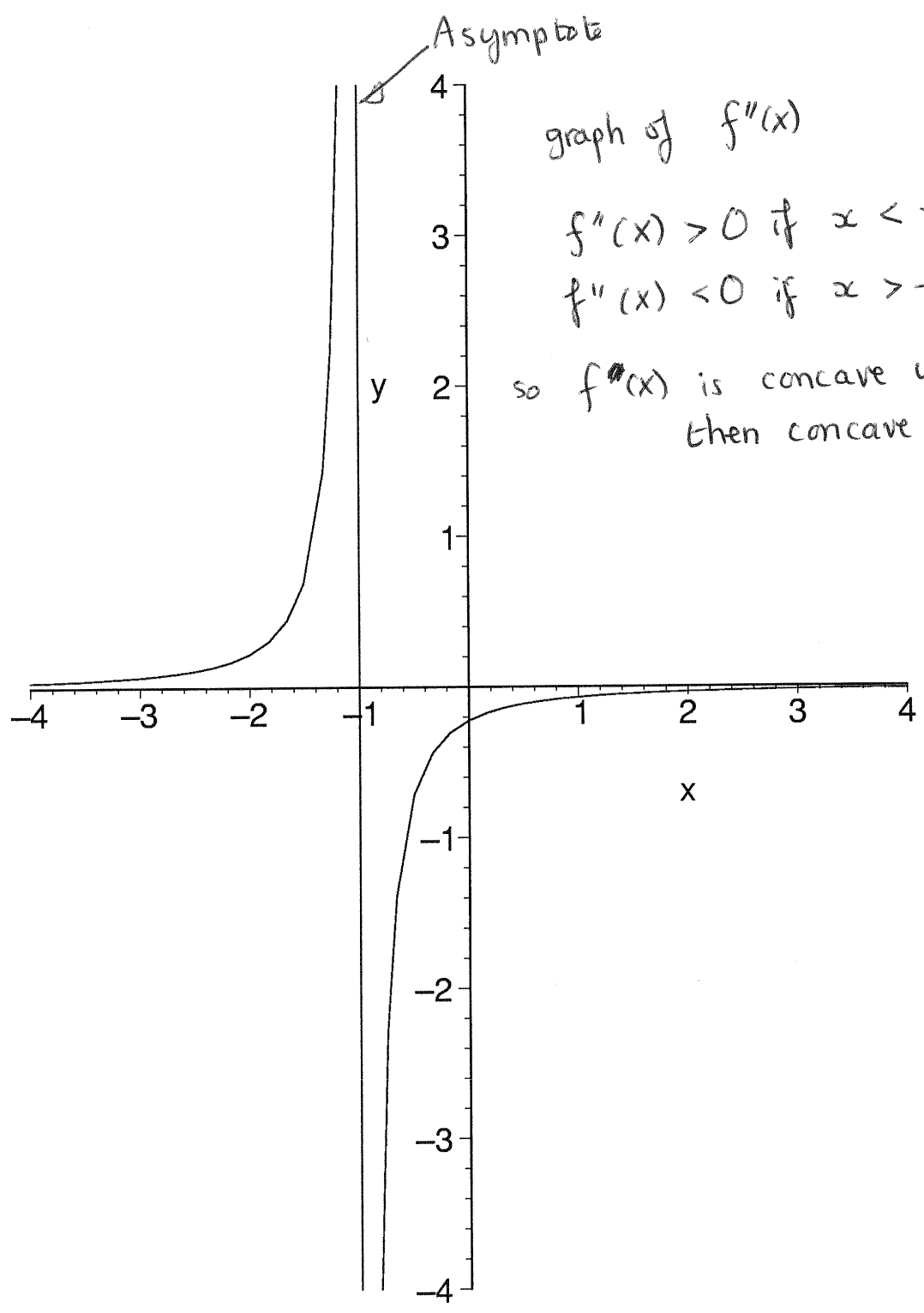


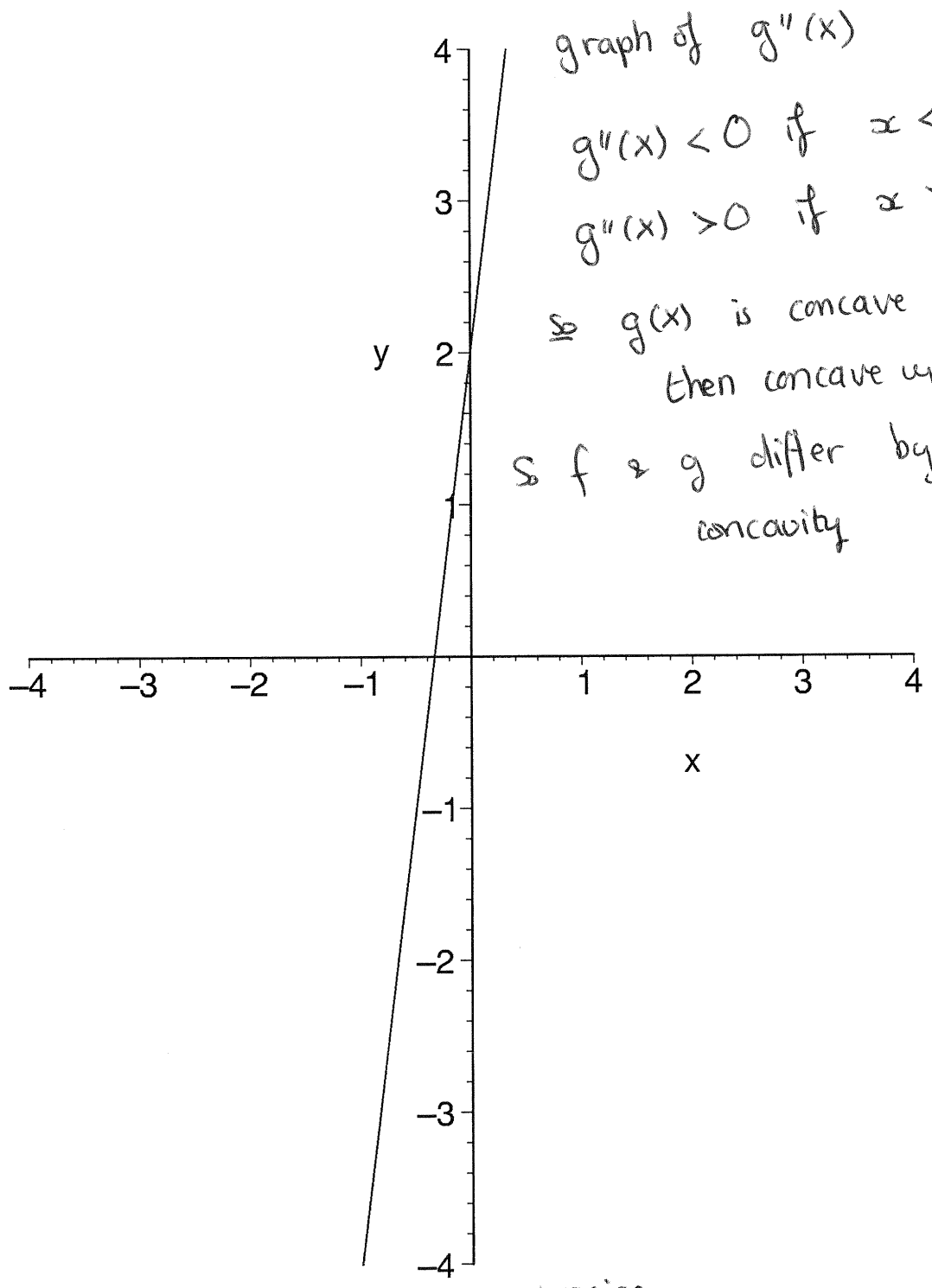


graph of $g'(x)$

this is never negative,
corresponding to the fact that
 $g(x)$ is always increasing.

so intervals of increasing and
decreasing
are the same for $f(x)$ & $g(x)$





graph of $g''(x)$

$g''(x) < 0$ if $x < -1/3$

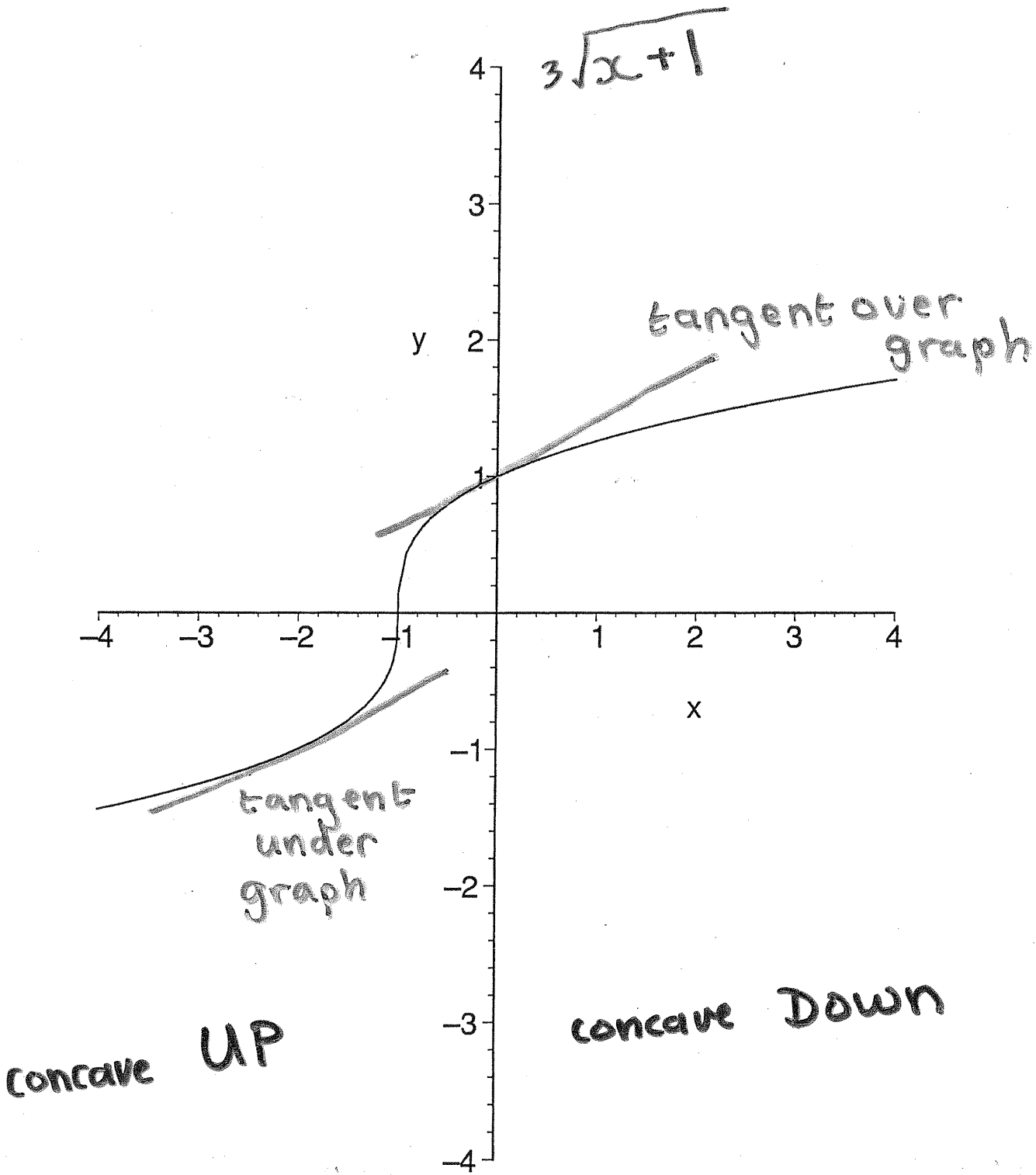
$g''(x) > 0$ if $x > -1/3$

so $g(x)$ is concave down,
then concave up.

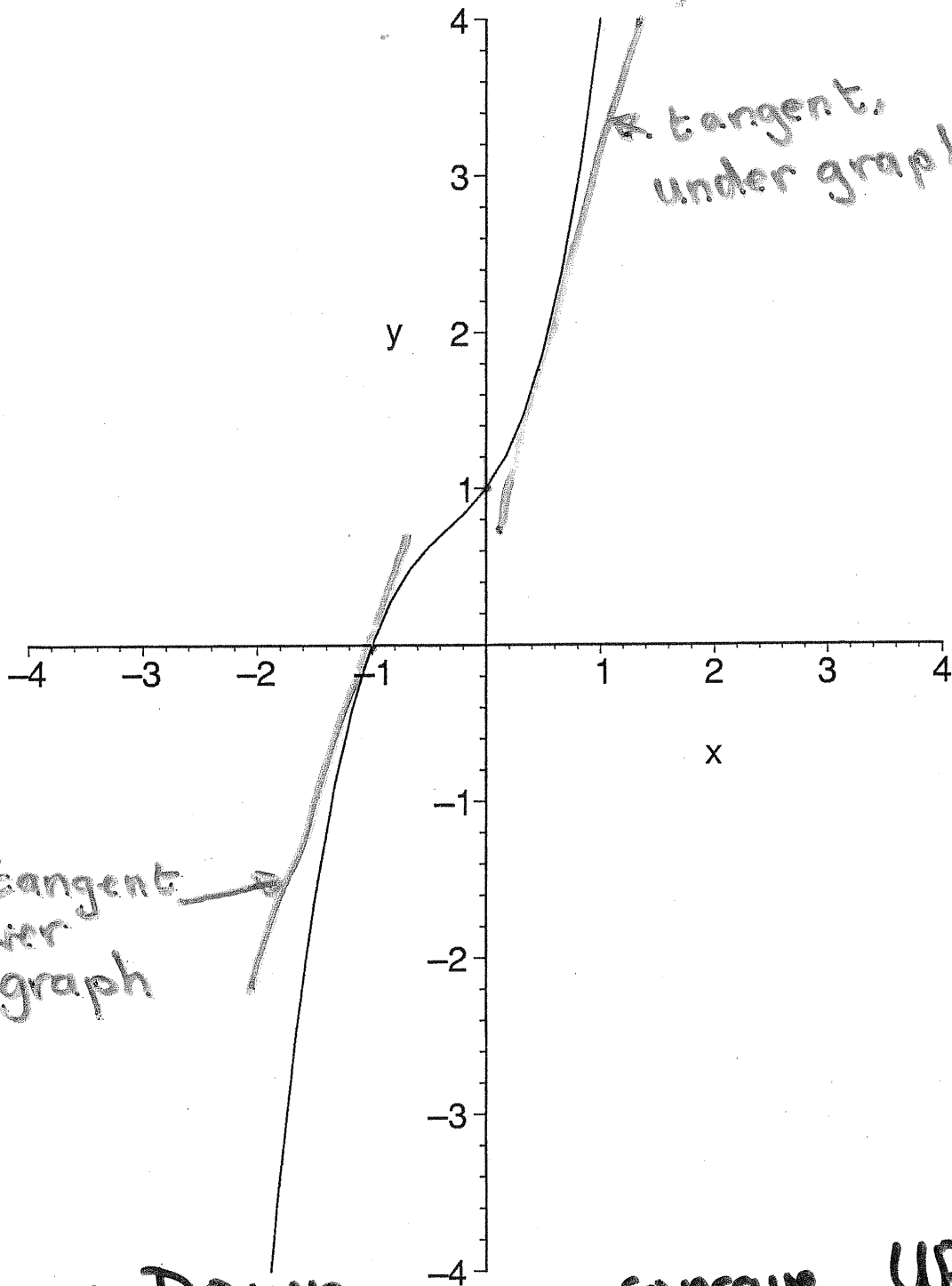
so f & g differ by their
concavity

exercise:

write down the equations for
 $f'(x)$, $g'(x)$, $f''(x)$ and $g''(x)$



$$y = (x+1)(x^2+1)$$



concave Down

concave UP