



3. Consider the function  $f(x) = \frac{x}{\sqrt{x^2+1}}$ . Find the following:

Domain, intercepts, symmetry, asymptotes(horizontal and vertical), intervals of increase or decrease, local min/max, concavity and points of inflection. Use the data to sketch the curve.

4. Find the critical numbers of the function

a)  $g(x) = x^{\frac{1}{3}} - x^{\frac{-2}{3}}$

b)  $f(x) = 1 + (x - 3)^2$  on  $(-2, 3]$