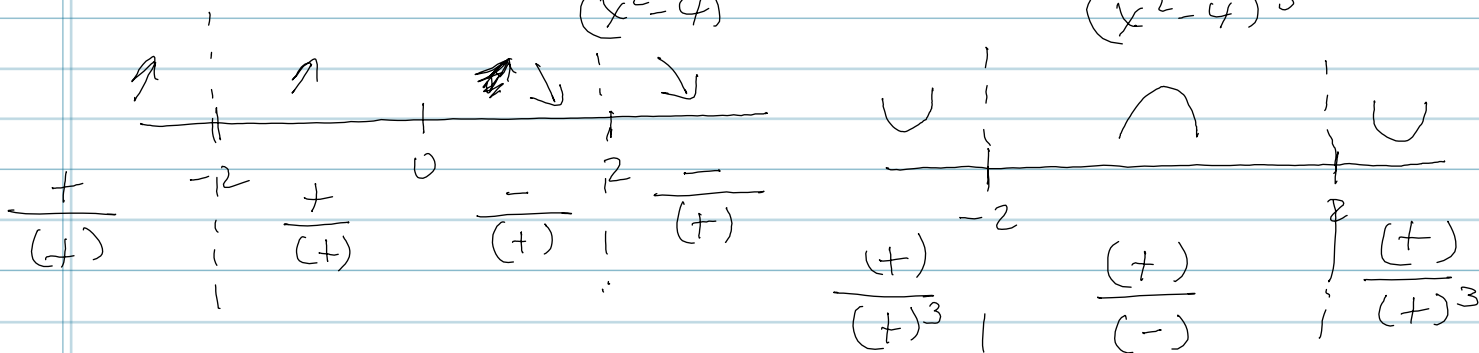


Problem 7  $f'(x) = \frac{-46x}{(x^2-4)^2}$ ,  $f''(x) = \frac{46(3x^2+4)}{(x^2-4)^3}$



INC:  $(-\infty, -2) \cup (-2, 0)$

DEC:  $(0, 2) \cup (2, \infty)$

CC UP:  $(-\infty, -2) \cup (2, \infty)$

CC DOWN:  $(-2, 2)$

$$f(x) = \frac{3+5x^2}{x^2-4} \quad \lim_{x \rightarrow \infty} \frac{\frac{3}{x^2} + 5}{1 - \frac{4}{x^2}} = \frac{0 + 5}{1 - 0} = 5$$

HA:  $y = 5$

VA:  $x = \pm 2$

INFLECTIONS: NONE

Problem 8  $2x^3 + y^3 = 1$   $(2, -1)$ ,  $\frac{dy}{dt} = 3$

$$6x^2 \frac{dx}{dt} + 3y^2 \frac{dy}{dt} = 0$$

$$6 \cdot 2^2 \cdot (3) + 3(-1)^2 \frac{dy}{dt} = 0$$

$$\frac{dy}{dt} = \frac{-72}{3} = \underline{\underline{-24}}$$