

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

$$f'(x) = \frac{(x^2 - 4)(2x) - (x^2 + 1)(2x)}{(x^2 - 4)^2}$$

$$f'(x) = \frac{\cancel{2x^3} - 8x - \cancel{2x^3} - 2x}{(x^2 - 4)^2}$$

$$f'(x) = \frac{-10x}{(x^2 - 4)^2}$$

$$f''(x) = \frac{(x^2 - 4)^2(-10) - (-10x)(2(x^2 - 4) \cdot 2x)}{(x^2 - 4)^4}$$

$$f''(x) = -10(x^2 - 4)^2 + 40x^2(x^2 - 4)$$

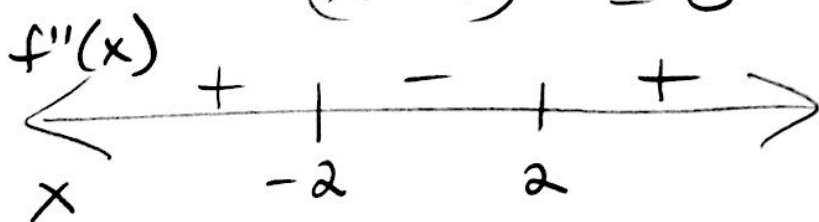
$$\cancel{(x^2 - 4)}(-10(x^2 - 4) + 40x^2)$$

$$-10x^2 + 40 + 40x^2$$

$$f''(x) = \frac{30x^2 + 40}{(x^2 - 4)^3} = 0$$

$$30x^2 = -40$$

$$x^2 = -\frac{40}{30} \quad \times$$



$$x^2 - 4 = 0$$

$$x = \pm 2$$

NOT POI  
b/c  $f(x)$  is  
undefined

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

$$CC \downarrow: (-2, 2)$$

NO POI

