$$y = \frac{8}{4-x^2}$$

$$y' = \frac{(4-x^2)\cdot 0 - 8(-2x)}{(4-x^2)^2}$$

$$y' = \frac{16x}{(4-x^2)^2}$$

Points of Non-Differentiability

$x = 2, -2$

Horizontal Asymptote

$y = 0$

$16x = 0$

$x = 0$

$\ominus \quad \ominus \quad \oplus \quad \oplus$

$-2 \quad 0 \quad 2$

…ning Point $(0, 2)$

Increase $[0,2) \cup (2,\infty)$

Decrease $(-\infty,-2) \cup (-2,0]$

$$y'' = \frac{(4-x^2)^2\cdot 16 - 16x(2(4-x^2)\cdot(-2x))}{(4-x^2)^2}$$

$$y'' = \frac{16(4-x^2)^2 + 64x^2(4-x^2)}{(4-x^2)^4}$$

$$y'' = \frac{16(4-x^2) + 64x^2}{(4-x^2)^3}$$

$$y'' = \frac{64 - 16x^2 + 64x^2}{(4-x^2)^3}$$

$$y'' = \frac{64 + 48x^2}{(4-x^2)^3}$$

$64 + 48x^2 = 0$

$48x^2 = -64$

$x^2 = -4/3$

$x = \phi$

$\ominus \quad \oplus \quad \ominus$

$-2 \quad 2$

No Points of Inflection because PND's

Concave Down $(-\infty,-2) \cup (2,\infty)$

Concave Up $(-2,2)$