

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

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

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

Points of Non-Differentiability

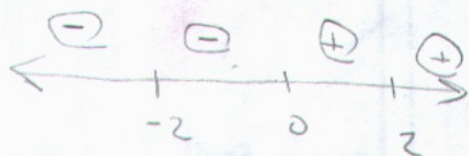
$$x = 2, -2$$

Horizontal Asymptote

$$y = 0$$

$$16x = 0$$

$$x = 0$$



Turning Point $(0, 2)$

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

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

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

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

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

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

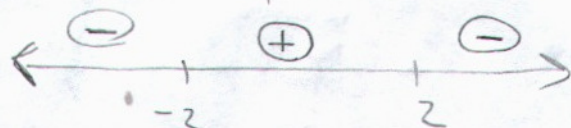
$$y'' = \frac{64 + 48x^2}{(4-x^2)^3}$$

$$64 + 48x^2 = 0$$

$$48x^2 = -64$$

$$x^2 = -\frac{4}{3}$$

$$x = \phi$$



No Points of Inflection because PND's

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

Concave Up $(-2, 2)$

