

Thus, at $x=0$, there is a relative minimum.

$$\begin{aligned} g''(x) &= \frac{(4-x^2)^2 \cdot 26 - 26x(2(4-x)(-2x))}{(4-x^2)^4} \\ &= \frac{(4-x^2)(26)[4-x^2+4x^2]}{(4-x^2)^4} = \frac{26(3x^2+4)}{(4-x^2)^3} \end{aligned}$$

$g''(x) > 0$ for all $x \neq \pm 2$. (not in the domain).

No inflection points; always concave up for $x \in (-2, 2)$
concave down for $x \in (2, \infty)$
 $x \in (-\infty, -2)$

