

Exercise 77

Determine whether f is even, odd, or neither. If you have a graphing calculator, use it to check your answer visually.

$$f(x) = 1 + 3x^2 - x^4$$

Solution

Substitute $-x$ for x and see what happens.

$$\begin{aligned} f(-x) &= 1 + 3(-x)^2 - (-x)^4 \\ &= 1 + 3x^2 - x^4 \\ &= f(x) \end{aligned}$$

f is even because $f(-x) = f(x)$. This is indicated by the symmetry about the vertical axis in the graph below.

