

Exercise 52

For the following exercises, determine whether the function is odd, even, or neither.

$$h(x) = 2x - x^3$$

Solution

Plug in $-x$ for x and see if the result is either $h(x)$ or $-h(x)$.

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

Therefore, the function is odd.