Exercise 15

For the following exercises, determine whether the functions are even, odd, or neither.

$$f(x) = -\frac{5}{x^2} + 9x^6$$

Solution

Plug $-x$ into the function.

$$\begin{aligned} f(-x) &= -\frac{5}{(-x)^2} + 9(-x)^6 \\ &= -\frac{5}{(-1)^2x^2} + 9(-1)^6x^6 \\ &= -\frac{5}{(1)x^2} + 9(1)x^6 \\ &= -\frac{5}{x^2} + 9x^6 \\ &= f(x) \end{aligned}$$

Since $f(-x) = f(x)$, the function is even.