

Exercise 3.3.11

Given a sketch of $f(x)$, describe a procedure to sketch the even and odd parts of $f(x)$.

Solution

To get the even part of f at some positive value of x , take the average of $f(x)$ and $f(-x)$ and plot the point. Repeat this for other values of x until there are enough points to draw a smooth curve through them. Then reflect this curve over the y -axis to get the graph for negative values of x . In other words, draw the even extension.

To get the odd part of f at some positive value of x , take the difference of $f(x)$ and $f(-x)$, divide it by 2, and plot the point. Repeat this for other values of x until there are enough points to draw a smooth curve through them. Then reflect this curve over the origin to get the graph for negative values of x . In other words, draw the odd extension.