Selftest: Functions

1. Write a python implementation of the functions

   a. $x \mapsto \dfrac{x^2 - 3}{x^2 + 3}$

   b. $x, y \mapsto \dfrac{1 - xy}{1 + x^2 + y^2}$

2. Write a function that implements the function $f(x) = e^{\frac{x}{100}} - x + \dfrac{x^2}{50}$. Then develop a function that returns the smallest positive integer such that $f(x) > 10$. Here is the graph of the function.