

PRACTICE QUIZ 3

ADRIAN PĂCURAR

Time: 15 min

Time to beat: 6 min

Problem 1. Given $f(x) = \frac{x-1}{x^2+2}$, find:

(a) $f(-1) =$

(b) $f(2a) =$

(c) $f(1/x) =$

(d) $f(x+h) =$

Problem 2. Determine the domains of the functions

(a) $f(x) = \sqrt{4-x}$

(b) $f(x) = \sqrt{4-x^2}$

(c) $f(x) = \frac{1}{x^4-81}$

Problem 3. If $f(x) = x^2 + 2x$, find $\frac{f(a+h)-f(a)}{h}$. Simplify your answer.

Problem 4. If $f(x) = 2^x$, show that
(a) $f(x+3) - f(x-1) = \frac{15}{2}f(x)$

(b) $\frac{f(x+3)}{f(x-1)} = f(4)$