Exercise 8

For the following exercises, find the values for each function, if they exist, then simplify.

a. $f(0)$ b. $f(1)$ c. $f(3)$ d. $f(-x)$ e. $f(a)$ f. $f(a+h)$

$$f(x) = 4x^2 - 3x + 1$$

Solution

Evaluate each of the functions.

$$f(0) = 4(0)^2 - 3(0) + 1 = 0 - 0 + 1 = 1$$

$$f(1) = 4(1)^2 - 3(1) + 1 = 4 - 3 + 1 = 2$$

$$f(3) = 4(3)^2 - 3(3) + 1 = 36 - 9 + 1 = 28$$

$$f(-x) = 4(-x)^2 - 3(-x) + 1 = 4x^2 + 3x + 1$$

$$f(a) = 4(a)^2 - 3(a) + 1 = 4a^2 - 3a + 1$$

$$f(a+h) = 4(a+h)^2 - 3(a+h) + 1 = 4(a^2 + 2ah + h^2) - 3(a+h) = 4a^2 + 8ah + 4h^2 - 3a - 3h$$