ALGEBRA 2 HONORS
PROBLEM SET #3

DUE DATE: AUGUST 24, 2023

Question 1. For each of the following recursive formulas, find the first 4 terms of the sequence.

(1) $a_{n+1} = 3a_n + 2, \quad a_1 = 2$

(2) $b_{n+1} = -2b_n - 2, \quad b_1 = 4$

(3) $c_{n+1} = -c_n, \quad c_1 = 1$

(4) $d_{n+1} = d_n + 10, d_1 = -4$

(5) $x_{n+1} = x_n + 3, x_1 = 4$

Question 2. Consider a function $f(x) = 3x + 4$. Compute

(a) $f(0) =$

(b) $f(1) =$

(c) $f(2) =$

(d) $f(3) =$

(e) $f(-3) =$

(f) $f(10) =$

Question 3. Consider a function $f(x, y) = 2x^2 - y$. Compute

(a) $f(1, 2)$

(b) $f(2, -3)$

(c) $f(0, 100)$

Question 4. Consider a sequence with a closed formula defined by $a_n = 4n + 2$. What are the values of a_1, a_2, a_3 and a_4? Is the sequence arithmetic?