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22C:019 Homework 2

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4a. domain : Set of non-negative integers Z – Z-

range: {0,1,2,3,4,5,6,7,8,9}

6b. domain: set of positive integers

range: {0,1,2,3,4,5,6,7,8,9}

14b. not onto

22d. f(x) = (x^5)+1 is a bijection

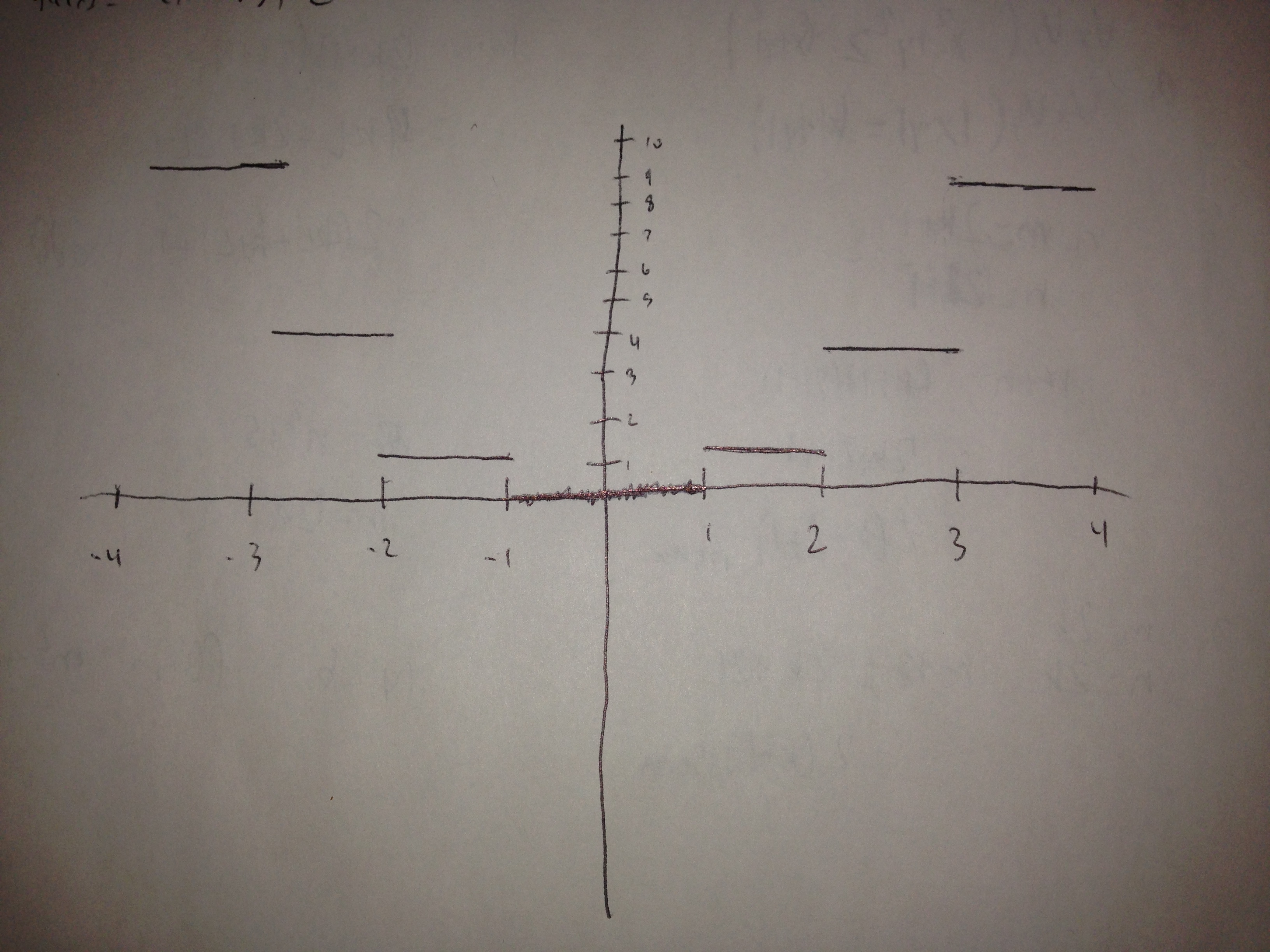
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36. f o g = (x^2)+4x+5

g o f = (x^2) + 3

42c. R-{-2,2}

68d.



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4d. a\_0 = 2; a\_1 = 0; a\_2 = 8; a\_3 = 0

8.

1) a\_0 = 1; a\_1 = 2 + a\_0; a\_2 = a\_1 + 2; a\_3 = a\_2 + 2; Fibonacci sequence

2) { 2n+1}; arithmetic progression

3) n = 2; a\_3 = a\_2 + a\_1 – 1; recurrence formula

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16c. a\_n = 4 – ((n(n+1))/2)

20a. P\_0 = 6.9; P\_n = (1.011)P\_(n-1)

b.((1.011)^n)6.9

26c.

2^0, 2^1, 2^2, …, 2^(n-1)

2^(c-1) with 1 on the left and 2^(c-1) with 0

a\_n = n

f. a\_n = (2n-1)

34d. 180

40. 380477799