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CS 225 Section 400, Su 2017

Assignment 4 – Due 7/23/2017

Part II. Exercise Set 5.6 [4], Set 5.7 [6,7]

Set 5.6

Find the first four terms of each of the recursively defined sequences.

4Q: $d_k = k(d_{k-1})^2$, for all integers $k \geq 1$ $d_0 = 3$

A: for k = 1

$d_1 = 1(d_{1-1})^2 = 1\ (d_0)^2 = 1(3)^2 = 9$

for k = 2

$d_2 = 2(d_{2-1})^2 = 2(d_1)^2 = 2(9)^2 = 162$

for k = 3

$d_3 = 3(d_{3-1})^2 = 3\ (d_2)^2 = 3(162)^2 = 78732$

First four terms are:

$d_0 = 3$
$d_1 = 9$
$d_2 = 162$
$d_3 = 78732$

Set 5.7 [6, 7]

6Q: $d_k = 2\ d_{k-1} + 3$, for all integers $k \geq 2$, $d_1 = 2$

A:

For k = 2

$d_2 = 2\ d_{2-1} + 3 = 2\ d_1 + 3 = 2(2) + 3 = 7$

$d_3 = 2\ d_{3-1} + 3 = 2\ d_2 + 3 = 2(7) + 3 = 17$

$d_4 = 2\ d_{4-1} + 3 = 2\ d_3 + 3 = 2(17) + 3 = 37$

//Apologies, ran out of time on this homework