

MATH/CSE 1019 Discrete Math for Computer Science

Assignment 7

Released: November 26, 2012

Due: 1 pm, December 4, 2012

Notes:

1. No late submissions will be graded.
2. Submit your assignment using the dropbox, which is located on the 1st floor of LAS.
3. You must do the assignment by yourself
4. Submit this assignment only if you have read and understood the policy on academic honesty on the course web page. If you have questions or concerns, please contact the instructor.

Questions:

1. (3 points) Give a recursive definition of the sequence $a_n = 2^n - 2$, $n = 1, 2, 3, \dots$
2. (3 points) Give a recursive definition of the set of perfect squares, i.e. $\{0, 1, 4, 9, 16 \dots\}$.
3. (3 points) How many positive integers between 0 and 9999 inclusive
 - (a) are divisible by 3?
 - (b) are not divisible by 9 and 7?
 - (c) are divisible by 9 but not by 7?
4. (3 points) How many 3 digit numbers can you make using the digits 1, 2, 4, 5, and 7 without repetitions?
5. (3 points) Suppose there are 8 books on fairy tales, 6 novels and 10 plays. In how many ways can you arrange these so that books on fairy tales are together, novels are together and plays are together?