

Worksheet #17; date: 10/24/2018
MATH 55 Discrete Mathematics

1. (*Rosen 8.5.11*) Find the number of positive integers not exceeding 100 that are either odd or the square of an integer.
2. Suppose a school offers only three classes, Discrete Mathematics, Linear Algebra and Multivariable Calculus. Suppose there are 20 students taking Discrete Mathematics, 30 taking Linear Algebra and 40 taking Multivariable Calculus. Also suppose that there are 10 students who are brave enough to take more than one class. Can we determine the number of total students taking at least one class? If not, what is the maximum and minimum number of such students?
3. (*Rosen 8.6.3*) How many solutions does the equation $x_1 + x_2 + x_3 = 13$ have where x_1 , x_2 and x_3 are nonnegative integers less than 6?
4. (*Rosen 8.6.9*) How many ways are there to distribute six different toys to three different children such that each child gets at least one toy?
5. (*Rosen 8.6.17*) How many ways can the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 be arranged so that no even digit is in its original position?