

COMPUTER SCIENCE 20, SPRING 2012  
DISCRETE MATHEMATICS FOR COMPUTER SCIENCE

Class #24 (Basic Probability)

**Homework, due in hard copy Monday 4/9/2012 at 10:10am**

**Please write your TF's name on your homework, and list the names of any students with whom you collaborated.**

1. You have two identical 10-sided dice numbered  $1, 2, \dots, 10$ , with the strange property that the probability of rolling  $n$  is *proportional* to  $n$ .
  - (a) What is the probability of rolling an  $n$ ? (Express your answer as some formula involving  $n$ .)
  - (b) You roll these two dice at the same time. What is the probability that the sum of the two rolls is at least 18? (You can leave your answer as a fraction.)
  - (c) Is the probability of rolling at least one 9 independent of the probability that the sum of the two rolls is at least 18? Justify your answer.