

HOMEWORK # 4

[1] Section 3.1: 1(a), 1(b), 5

[2] Section 3.2: 1, 2(a), 2(b), 2(c), 2(d)

[3] Section 3.3: 1, 2, 5, 6

[4] Section 3.5: 2

[5] Two balls are to be chosen randomly from an urn containing 8 white, 4 black and 2 orange balls. Suppose that we win \$2 for each black ball selected and we lose \$1 for each white ball selected. What are our expected winnings?

[6] Two fair dice are rolled. Let X be the product of the 2 dice. Compute $P(X=x)$, $x=1, 2, \dots$

[7] Assume that we toss a coin 3 times, with $P(H)=p$, $P(T)=1-p$. What is the expected difference between the number of heads and tails?

[8] An urn contains N white and M black balls. Balls are randomly selected with replacement, until a black one is obtained. What is the probability that at least K draws are needed?