

# COS 340 / Fall 2020 / Problem Set 2 Grade Report

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**Precept/Preceptor: P03/Girish**

Problems	Max Points	Points
Problem 1	20	20
Problem 2	20	20
Problem 3	20	20
Problem 4	20	20
Problem 5	20	20
Problem 6	20	15
<b>TOTAL</b>	<b>120</b>	<b>115</b>

# Deductions & Comments

**Exercise 1.** Excellent!

**Exercise 2.** Excellent work! For part 2b, there is a closed form expression. Think of adding another box, which contains all balls that are not placed in the first  $m$  boxes. (-0.5 points)

**Exercise 3.** Excellent!

**Exercise 4.** Excellent!

**Exercise 5.** Excellent! Your expressions are correct in part A, but the final number is wrong due to calculation mistakes. (-0.5 points)

**Exercise 6. Exercise 6.** Good attempt. Your argument for  $P(E_1 \text{ and } E_2 | E_3) = P(E_1)P(E_2)$  requires more justification. This does not follow from the definitions given in class. It is in reality a restatement of what you need to prove in a particular scenario. For an example, you may have  $P(A) = 1/2$  but not necessarily  $P(A|B) = 1/2$  for  $B$  such that  $P(B) > 0$ , so we cannot take every equation and simply condition on both sides. (-5 points.)