

Assignment 1

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due: Jan 24, 2019

Probability

Your Professor was presented with 10 espressos, and was told that 5 were made with Illy beans, and the other 5 were made using Lavazza beans. After tasting each espresso, presented in randomized order, your Professor was asked to identify the 5 Illy espressos and the 5 Lavazza espressos. The data are presented below. The first column indicates the true identity of each espresso, and the second column indicates your Professor's response.

True Identity	Response
Illy	Illy
Illy	Lavazza
Lavazza	Illy
Illy	Illy
Lavazza	Illy
Lavazza	Lavazza
Illy	Illy
Lavazza	Lavazza
Lavazza	Lavazza
Illy	Lavazza

1. What is the probability that your Professor could have performed as well as they did, if they were guessing? Show your work. (3 points)
2. Assume you tested your Professor on 100 espressos (50 Illy and 50 Lavazza), randomly presented one at a time. How many would they have to correctly identify in order for you to be able to say that there is less than a 1 in 1,000 chance of being correct that many times or greater, if they were guessing? Show your work. (4 points)