

MTH 357/657

Homework #4

Due Date: February 17, 2023

1 Problems for Everyone

1. A multiple-choice exam consists of eight questions and three answers to each questions (of which only one is correct). If a student answers each questions randomly, what is the probability that they will get exactly four correct answers?
2. A social scientist claims that only %15 of graduating English majors complete a novel in their lifetime. Assuming this claim is true, find the probabilities that among 18 graduating English majors
 - (a) exactly 10 will write a novel;
 - (b) at least 10 will write a novel;
 - (c) at most eight eight will write a novel.
3. If the probability is .75 that a person will believe a rumor, find the probabilities that
 - (a) the eighth person to hear the rumor will be the fifth to believe it;
 - (b) the fifteenth person to hear the rumor will be the tenth to believe it.
4. Among the 16 applicants for a job, 10 have college degrees. If three of the applicants are randomly chosen for interviews, what are the probabilities that
 - (a) none have a college degree;
 - (b) one has a college degree;
 - (c) two have college degrees;
 - (d) all three have college degrees.
5. If six letters are randomly selected from the word Mississippi, what is the proababilityt that the letters could be arranged to spell the word "simpis".