

APPLIED MATHEMATICS 13/02/2018

1) An airline knows that 5 percent of the people making reservations on a certain flight will not show up. Consequently, their policy is to sell 52 tickets for a flight that can hold only 50 passengers. What is the probability that there will be a seat available for every passenger who shows up?

2) A random variable X is said to have a lognormal distribution if $\log X$ is normally distributed. If X is lognormal with $E(\log X) = \mu$ and $\text{Var}(\log X) = \sigma^2$, determine the pdf of X .

3) A politician requires a pool for the coming election day with level of confidence 99% and margin of error 1% for the percentage of votes for her/his side. Assume that this percentage will be not larger than 20%. How many people has to be contacted for the pool?