

Problems for Class 5

TRUE or FALSE problems

State whether you believe the given statement is TRUE or FALSE and provide a brief argument for your answer.

1. Let the random variable Z follow the standard normal distribution. The value of k that satisfies $P(0.1 < Z < k) = 0.2991$, is $k=0.99$
2. Suppose the natural logarithm of the height (in centimetres) of the male students in this statistics class follows a normal distribution with mean 5.14 and standard deviation 2.48. Consider the statement: "75% of the male students in this class are shorter than k ". The k that satisfies this statement is 180cm.
3. Let Y be a random variable that follows an exponential distribution with mean 2. Then $P(Y \leq 3) = 0.667$

Exercises

Exercises 1-10: NCT 6.18, 6.22, 6.24, 6.28, 6.34, 6.56, 4.68, 4.72, 4.75, 4.78

11. (midterm 05-06) The time of a visit to a nurse at the University of Jumpington Health Service follows an exponential distribution with mean 6 minutes.
 - (i) What is the probability that a visit lasts longer than 10 minutes?
 - (ii) What is the probability that a visit lasts between 3 and 9 minutes?