SADET-Module-B2: Basic Statistical Concepts
Quiz 1

Please mark T/F to indicate true/false.

[   ] 1. The probability of the union of two events A and B, is equal to the sum of the probabilities of the two events.

[   ] 2. The Bayesian approach introduces a subjective bias.

[   ] 3. Consider the random variable X that follows a normal distribution with 0 mean and standard deviation equal to 1, i.e., $f(x) = \frac{1}{\sqrt{2\pi}}e^{-\frac{x^2}{2}}$. The probability that $x = \mu$ is $\frac{1}{\sqrt{2\pi}}$.

[   ] 4. The normal distribution can be used to model the total number of customers in a coffee shop during a day.

[   ] 5. You are rolling a dice. Consider the following two events; A: the dice rolls a 2, B: the dice rolls an even number. The two events are independent.

[   ] 6. The probability density function of a random variable is always between 0 and 1.

[   ] 7. The z-score for an American Football Quarterback (QB) with pass completion percentage 68% is 2.8, while the z-score for a soccer defender with pass completion percentage 81% is 1.1. The QB performance is more extraordinary compared to that of the soccer defender.

[   ] 8. A Bayesian average can be useful when a sample average is obtained through a small sample.

[   ] 9. Type I and Type II errors in a hypothesis test cannot be minimized simultaneously.

[   ]10. The Cumulative Distribution Function of a random variable is a monotonically increasing function.