Sample Quiz Questions

w203 Instructional Team

Triple Threat

Suppose there are three events, A, B, and C, with $P(A) = P(B) = P(C) = 2/3$. What is the minimum possible value for $P(A \cap B \cap C)$?

a) 1/3
b) 2/3
c) 1/2
d) 0

Coin Flips

Out of 100 coins, 99 are normal and 1 has two heads. One coin is pulled out at random. Let T be the event that it is the trick coin. The probability of this event is P(T) = 0.01. The random coin is flipped and comes up heads. Call this event H. Compute the conditional probability that the coin is the trick coin, P(T|H).

Describing Random Variables

Which of the following could be a valid Cumulative Distribution Function?

a) $F_X(x) = \begin{cases} 1 - |x|, & |x| \leq 1 \\ 0, & |x| > 1 \end{cases}$

b) $F_X(x) = \begin{cases} 0, & x \leq 0 \\ x^2, & 0 < x \leq 1 \\ 1, & x > 1 \end{cases}$

c) $F_X(x) = \begin{cases} \frac{1}{2}e^x, & x < 0 \\ 1 - \frac{1}{2}e^{-x}, & x \geq 0 \end{cases}$

d) $F_X(x) = \log(x)$

e) both b and c

f) both a and d

Sampling

Suppose that weekly beer consumption among the San Francisco population is normally distributed, with a mean of 50oz. Which of the following is more likely to occur?

a) Choosing one San Franciscan at random and finding that they drink over 70oz of beer a week.

b) Choosing 100 San Franciscans at random and finding that they drink an average of over 52oz of beer a week.

c) (a) and (b) are equally likely.

d) It depends on the standard deviation of the population.