

Quiz 1

Theoretically there can be an infinite number of decimal places after the decimals. Page 62

Quiz 2 . Coefficients of Correlation are independent of Change of Origin:

This property reveals that if we subtract any constant from all the values of X (or add any constant to all the values of X) Page 865

. Coefficient of Correlation is independent of Change of Scale:

This property reveals that if we divide or multiply all the values of X by any constant and divide or multiply all the values of Y by any constant, it will not affect the coefficient of correlation

Quiz 3 Jacobian (denoted by J) of the transformation. Page 254

Quiz 4 say, 20% is known as the 20th percentile, the point to the left of which the area is, say, 35% is known as the 35th percentile and so Page 296

Quiz 5 • The quantile function is also called the inverse cumulative distribution function Page 311

Quiz 6 The joint probability distribution can be expressed either in terms of a joint cumulative distribution function or in terms of a joint probability density function (in the case of continuous variables) or joint probability mass function (in the case of discrete variables). Page 583

Quiz 7 (Cumulative Distribution Function) the discrete case it is like a staircase Page 114

Quiz 8 Coefficient of Correlation is independent of Change of Scale: $P_{UV} = P_{XY}$ Page 867

Quiz 9 Let X be a random vector. Then the expected value of X exists if the expectations of X_1 and X_2 exist. Page 738

Quiz 10 The central moment generating function is given denoted by $C(t)$ Page 515

Quiz 11 correlation
$$\rho = \frac{[(x - u_1)(x - u_2)]}{\sigma_1 \sigma_2} = \frac{\text{cov}(X, Y)}{\sigma_1 \sigma_2}$$
 Page 850

Quiz 12 6. If two variables X and Y are independent, coefficient of correlation between them will be zero. Page 873

Quiz 13 Any experiment or process in which the outcome is unpredictable that is eligible to be called a random Page 3

Quiz 14 For any distribution, if a higher moment exists, then all lower moments necessarily exists. Page 815

Quiz 15 The conditional probability of even A, given event B, as

$$P(A/B) = \frac{P(A \cap B)}{P(B)} = P(B) \neq 0 \text{ Page 819 This number is called the covariance of X and Y and}$$

is often denoted by $\text{cov}(X,Y)$. Page 849

Quiz 16 If x and y are two real numbers then the absolute value (the modulus) of $|x+y|$ is less than or equal to the modulus of $|x|$ and modulus of $|y|$ $\|x+y\| \leq \|x\| + \|y\|$ Page 752

Quiz 17 Let X be a random variable with cumulative distribution function $F(x)$.

Then, (b) $\lim_{x \rightarrow -\infty} F(x) = 0$ (the lower limit of F is 0). Page 152

Quiz 18 cdf the joint cumulative distribution function Page 587

Quiz 19 Maclaurin's series Page 447

Quiz 20 probability density function (pdf) Page 64

Quiz 21 a random variable f it is finite, then the expectation exists and we can determine its expectation by obtaining the distribution and if it is infinite (i.e. if it is not finite), we shall say that the expectation of X does not exist Page 688 2 Quiz

Quiz 22 joint probability distribution In the case of only two random variables, this is called a bivariate distribution Page 582

Quiz 23 For a continuous random variable X , the CDF is as follows:

- $F(x) = 0$ for all x values which are less than zero
- $F(x) = x$ for all those x values that lies between 0 and 1.
- $F(x) = 1$ for all those x values are greater than 1. Page 130

$$\text{Quiz 24 } E(X_2) = E[E(X_2 / X_1)]$$

This is sometimes called the law of total expectation and sometimes it is called the law of iterated expectations. Page 844

Quiz 25 Sample Space It is the set of all possible outcomes of a random experiment Page 8

Quiz 26 probability density function $f(x)$ Page 692

Quiz 27 The concept of the CDF, will always be monotonically increasing function. Page 194

Quiz 28 The Characteristic function e^{itx} $\varphi_X(t)$ Page 794 2 quiz

Quiz 29 $P(X=x)=1/6$ fair die 1,2,3,4,5,6 Page 43

Quiz 30 cumulative distribution function $F(x)$. Page 57

Quiz 31

- In the continuous case, the marginal pdf of X_1 is found by integrating out x_2 .



• Similarly, the marginal pdf of X_2 is found by integrating out x_1 . Page 668

Quiz 32 the value of $F_{xy}(\infty, \infty) = 1$ Page 637

Quiz 33 The Probability of an impossible event. Is 0 Page 153

Quiz 34 pdfs satisfy the two properties

1) $f_X(x) > 0$ and (ii) $\int_{-\infty}^{\infty} f_X(t) dt = 1$

2) The second property, of course, follows from $F_X(\infty) = 1$ Page 200

Quiz 35 The sum of the first n natural numbers $\frac{n(n+1)}{2}$ Page 55

Quiz 36 The median of a distribution of a random variable X of the discrete or continuous type is a value of x such that Page 282

Quiz 37 $x = \frac{1}{2\sqrt{y}}$, $y = 0.6$

$$x = \frac{1}{2\sqrt{0.6}} = \frac{1}{1.549193} = 0.6454 = 0.65$$