

SOLUTIONS

King Fahd University of Petroleum & Minerals
Department of Mathematical Science
STAT-211-Term042-I

Quiz #4

Section:

Name:

ID:

Serial:

Question One (5-Points)

Write **True** if the statement is true or **False** if not:

1. An event E from the sample space S may be discrete or continuous: **True**
2. If E_1 and E_2 are independent and E_1 occurs then E_2 can't occur: **False**
3. The conditional probability of two mutually exclusive events always zero: **True**
4. The infinite set $\{1, 2, 3, \dots\}$ is possible values for a continuous random variable: **False**
5. If $\sigma_{xy} = 1$ then there is a perfect positive linear relationship between X and Y : **False**

Question Two (5-Points)

1. If the sample space $S = \{-2, -1, 3, 5, 7, 8\}$, $A = \{-2, 3, 5\}$ and $B = \{3, 7\}$ then

$$P(A \text{ or } B) =$$

- a. $\frac{1}{2}$ b. $\frac{5}{6}$ **c. $\frac{2}{3}$** d. $\frac{1}{6}$

2. Refer back to the above sample space in part (1), then $P(\overline{A \text{ and } B}) =$

- a. $\frac{2}{3}$ b. $\frac{1}{6}$ **c. $\frac{5}{6}$** d. $\frac{1}{2}$

3. If X is a random variable having the following probability distribution, then $\mu_x =$

- a. 16 **b. 3.4** c. -1 d. 1

X	1	2.5	3.5	4	5
$P(x)$	.2	.15	.05	.35	.25

4. Refer back to part(3), then σ_x^2 is equal to:

- a. 3.734 **b. 2.04** c. 256 d. 1.43

5. If X and Y two random variables, and $E(X) = 4$, $E(Y) = -5$, then $E(X - Y) =$

- a. -9 **b. 9** c. 1 d. -1