Sample Test Two: Sets 11 to 20

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Questions 5 and 6 refer to the following scenario:

Consider the following joint probability function of X and Y.

$f(x,y)$		y		
		0	1	2
	0	0.4	0.1	0.2
x	5	0.1	0.1	0.1

5. Find $P(Y \geq 1 | X = 5)$.

6. Find $Cov(X, Y)$.

[redacted]

[redacted]

[redacted]

[redacted]

11. Suppose that X_1, X_2, X_3 are independent normal random variables with means $10, 11, 15$ (respectively), and standard deviations $2, 5, 1$ (respectively). Let $Y = 3X_1 + X_2 - 2X_3$. Calculate $P(10 \leq Y \leq 11.5)$.

Answers:

5. $2/3$

6. 0.3

11. 0.0717