Feedback — Assignment 3: Computations

You submitted this homework on **Thu 10 Jan 2013 7:50 PM PST**.
You got a score of **100.00** out of **100.00**.

Question 1

Consider the following joint distribution of X and Y:

X/Y	1	2	3
1	0.1	0.2	0
2	0.1	0	0.2
3	0	0.1	0.3

Find the marginal distributions of X and Y.

(10) Using the table above, compute E[X].

Your Answer		Score	Explanation
◉ 2.1	✔	10.00	
Total		10.00 / 10.00	

Question 2

(10) Using the table from question 1, compute E[Y].

Your Answer		Score	Explanation
◉ 2.3	✔	10.00	
Total		10.00 / 10.00	

Question 3

(10) Using the table from question 1, compute the variance of X.

Your Answer		Score	Explanation
◉ 0.69	✔	10.00	
Total		10.00 / 10.00	

Question 4

(10) Using the table from question 1, compute the variance of Y.

Your Answer		Score	Explanation
◉ 0.61	✔	10.00	
Total		10.00 / 10.00	

Question 5

(10) Using the table from question 1, compute the standard deviation of X.

Your Answer		Score	Explanation
◉ 0.83	✔	10.00	
Total		10.00 / 10.00	

Question 6

(10) Using the table from question 1, compute the standard deviation of Y.

Your Answer	Score	Explanation

◉ 0.78	✔	10.00
Total		10.00 / 10.00

Question 7

(10) Using the table from question 1, what is the covariance of X and Y?

Your Answer		Score	Explanation
◉ 0.37	✔	10.00	
Total		10.00 / 10.00	

Question 8

(10) Using the table from question 1, what is the correlation of X and Y?

Your Answer		Score	Explanation
◉ 0.57	✔	10.00	
Total		10.00 / 10.00	

Question 9

(10) X and Y are independent.

Your Answer		Score	Explanation
◉ False	✔	10.00	
Total		10.00 / 10.00	

Question 10

Let r denote the continuously compounded monthly return on Microsoft stock and let W_0 denote initial wealth to be invested over the month. Assume that $r \sim$ iid $N(0.04, (0.09)^2)$ and that W_0 = $100,000.

(10) Determine the 1% and 5% value-at-risk (VaR) over the year on the investment. Hint: to answer this question, you must determine the normal distribution that applies to the annual (12 month) continuously compounded return. This was done as an example in class.

Your Answer		Score	Explanation
◉ 1% Var = -$21,752 5% Var = -$3,228	✔	10.00	
Total		10.00 / 10.00	