

Homework 0*Handed Out: January 22**Due: January 27***Name:** Yongxin Guo**PennKey:** yoguo**PennID:** 68201122**1 Multiple Choice & Written Questions**

1.
 - a. C
 - b. A
2.
 - a. D
 - b. A
3.
 - a. D
 - b. C
4.
 - a. B
 - b. $Var(X) = E[(X - E[X])^2] = E[X^2 - 2XE[X] + E[X]^2] = E[X^2] - 2E[XE[X]] + E[X]^2$. Please be noted that $E[x]$ is a expected value or mean of a random variable X , which is a constant number, thus, the expected value of an expected value it just itself so that $E[E[x]] = E[x]$. Then,

$$E[X^2] - 2E[X]^2 + E[X]^2 = E[X^2] - E[X]^2$$

2 Python Programming Questions

Complete questions 5 and 6 in the iPython notebook.