

**Homework 1***Handed Out: January 11**Due: January 25***Name:** Qihang Dai**PennKey:** ahgdyyc**PennID:** 10578812

Note: This document is a read-only file. To create an editable version click on Menu in the top left corner of your screen and choose the Copy Project option.

## 1 Multiple Choice & Written Questions

1. (a) A  
(b) B
2. (a) B  
(b) A
3. (a) C 0.92  
(b) B
4. (a) D  
(b)

$$\begin{aligned} \text{Var}(X) &= E[(X - E[X])^2] \\ &= E[X^2 - 2XE[X] + E[X]^2] \\ &= E[X^2] - 2E[X]E[X] + E[X]^2 \\ &= E[X^2] - E[X]^2 \end{aligned}$$

5. (a) B  
(b) A  
(c) D

## 2 Python Programming Questions

TODO : Please add the matplotlib plot for Q4 below

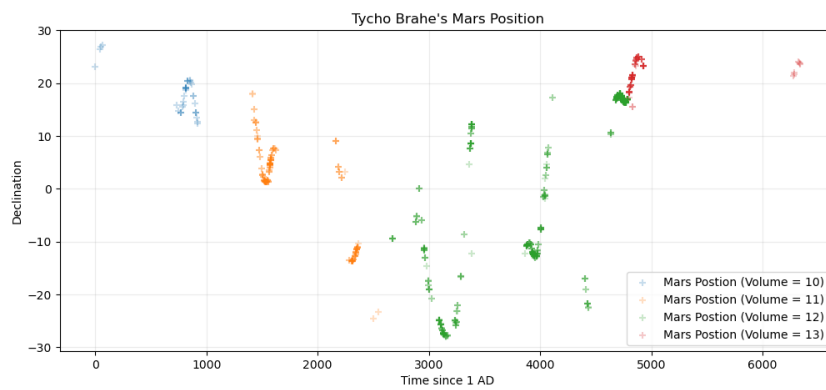


Figure 1: Figure for Q4 (Matplotlib)