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Intelligent Robotic

**Remind: the above add, minus, multi, division and exponent are all dot operator if values are vectors**

***Problem 1:*** Please derive the optimal estimator of for a given , where and What are the mean and variance of such an estimator?

***Problem 2:*** Please derive the optimal estimator of for a given , where

, , and . What are the mean and variance of such an estimator?

***Problem 3:*** Please derive the optimal estimator of for a given and a given , where ,, and . What are the mean and variance of such an estimator? (two solutions with and without using )

（1）

,

So

（2）

So

（3）

From problem 2, we have

From , which the same as