Exercise: Estimates and estimators

(3/3 points)

Valerie wants to find an estimator for an unknown random variable Θ. She can observe a random variable X whose distribution satisfies $\mathbf{E}[X^2 \mid \Theta] = \Theta$. She goes ahead and observes that X took a numerical value of 5. She then estimates Θ as the square of the observed value, namely, 25.

For each of the following questions, choose the most appropriate answer.

1) X^2 is an

Estimator ✔ **Answer:** Estimator

2) 25 is an

Estimate ✔ **Answer:** Estimate

3) $X^3 + 2$ is another (not necessarily good)

Estimator ✔ **Answer:** Estimator

Answer:
In the first and the third cases, we have a random variable $g(X)$, which is determined as a function of the observation X. Such a random variable is called an estimator.

In the second case, we are dealing with the realized numerical value of an estimator, which we call an estimate.

You have used 1 of 1 submissions


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