Quiz 8

1

1 point possible (graded)

In statistics,

- we use the sample statistics to learn about the distribution parameters,
- we use the distribution parameters to learn about the sample statistics.

Submit

2

1 point possible (graded)

If an estimator is unbiased, then

- its value is always the value of the parameter,
- its expected value is always the value of the parameter,
- it variance is the same as the variance of the parameter.

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3

1 point possible (graded)

The unbiased estimator for the standard deviation

- exists,
- doesn't exist.

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4

1 point possible (graded)

Two estimators s_1 and s_2 have the same MSE. If s_1 is unbiased and s_2 is biased, then

- s_1 has the smaller variance,
- s_2 has the smaller variance,
- they have the same variance,
- none of the above always holds.

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5

1 point possible (graded)

To correct the raw sample variance to make it unbiased, we multiply it by

- $\frac{n-1}{n}$
- $\frac{n}{n-1}$
- $\frac{n}{n+1}$
- $\frac{n+1}{n}$

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6

1 point possible (graded)

If all the observations in a sample increase by 5

- the sample mean increases by 5,
- the sample mean stays the same,
- the sample variance increases by 5,

- [ ] the sample variance stays the same.

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7

1 point possible (graded)

As the sample size n grows, the effect of the Bessel correction

- ( ) becomes larger,
- ( ) becomes smaller,
- ( ) stays the same.

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8

1 point possible (graded)

As the sample size n grows, the sample mean estimates the distribution mean better. Because

- [ ] its bias decreases,
- [ ] its variance decreases,

- [ ] its mean square error decreases,
- [ ] none of the above.

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