## Exercise: Variance properties

(1/1 point)

Is it always true that $\mathbf{E}[X^2] \geq \big(\mathbf{E}[X]\big)^2$?

Yes ✔ **Answer:** Yes

Answer:
We know that variances are always nonnegative and that $\text{var}(X) = \mathbf{E}[X^2] - \big(\mathbf{E}[X]\big)^2$. Therefore, $0 \leq \text{var}(X) = \mathbf{E}[X^2] - \big(\mathbf{E}[X]\big)^2$, or, equivalently, $\mathbf{E}[X^2] \geq \big(\mathbf{E}[X]\big)^2$.

*You have used 1 of 1 submissions*

Exercises 7 due Mar 02, 2016 at 23:59 UTC

**Solved problems**

**Additional theoretical material**

**Problem Set 4**
Problem Set 4 due Mar 02, 2016 at 23:59 UTC

**Unit summary**