# Exercise: Markov inequality

(1/1 point)

Let $Z$ be a nonnegative random variable that satisfies $\mathbf{E}[Z^4] = 4$. Apply the Markov inequality to the random variable $Z^4$ to find the tightest possible (given the available information) upper bound on $\mathbf{P}(Z \geq 2)$.

$\mathbf{P}(Z \geq 2) \leq$ 1/4 ✔ **Answer:** 0.25

Answer:
We have

$$\mathbf{P}(Z \geq 2) = \mathbf{P}(Z^4 \geq 16) \leq \frac{\mathbf{E}[Z^4]}{16} = \frac{4}{16} = \frac{1}{4}.$$

*You have used 1 of 2 submissions*


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