

IMM - DTU

02405 Probability
2003-10-2
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Question a) Markov's inequality

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$$P(X \geq 50,000)$$

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$$P(X \geq 50,000) \leq \frac{E(X)}{50,000}$$

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$$P(X \geq 50,000) \leq \frac{E(X)}{50,000} = \frac{1}{5}$$

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$$P(|X - E(X)| \geq kSD(X))$$

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we have $k = 5$ such that the probability is bounded by

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we have $k = 5$ such that the probability is bounded by $\frac{1}{25}$

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we have $k = 5$ such that the probability is bounded by $\frac{1}{25}$. The bound provided by Chebychevs inequality is much sharper than the one provided by Markov's inequality.