



MITx: 6.041x Introduction to Probability - The Science of Uncertainty



Bookmarks

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Overview
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Probability
models and
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Discrete
random
variables

Unit overview

Lec. 5: Probability
mass functions
and expectationsExercises 5 due Mar
02, 2016 at 23:59 UTCLec. 6: Variance;
Conditioning on
an event; Multiple
r.v.'sExercises 6 due Mar
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Conditioning on a
random variable;
Independence of
r.v.'sUnit 4: Discrete random variables > Lec. 6: Variance; Conditioning on an event;
Multiple r.v.'s > Lec 6 Variance Conditioning on an event Multiple r v s vertical 8

Bookmark

Exercise: Linearity of expectations drill

(1/1 point)

Suppose that $\mathbf{E}[X_i] = i$ for every i . Then,

$$\mathbf{E}[X_1 + 2X_2 - 3X_3] =$$

-4



Answer: -4

Answer:
Using linearity,

$$\begin{aligned}\mathbf{E}[X_1 + 2X_2 - 3X_3] &= \mathbf{E}[X_1] + \mathbf{E}[2X_2] - \mathbf{E}[3X_3] \\ &= \mathbf{E}[X_1] + 2\mathbf{E}[X_2] - 3\mathbf{E}[X_3] \\ &= 1 + 2 \cdot 2 - 3 \cdot 3 \\ &= -4.\end{aligned}$$

You have used 1 of 2 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

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