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Unit overview

Lec. 11: Derived
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Functions of a standard normal

Bookmark

Problem 2: Functions of a standard normal

(3/3 points)

The random variable X has a standard normal distribution. Find the PDF of the random variable Y , where:

1. $Y = 3X - 1$.

☐ $f_Y(y) = \frac{1}{3} f_X(3(y + 1))$

☐ $f_Y(y) = 3 f_X(3(y + 1))$

☒ $f_Y(y) = \frac{1}{3} f_X\left(\frac{y+1}{3}\right)$ ✓

☐ $f_Y(y) = 3 f_X\left(\frac{y+1}{3}\right)$

2. $Y = 3X^2 - 1$. For $y \geq -1$,

☐ $f_Y(y) = \frac{1}{6} \cdot \sqrt{\frac{3}{y+1}} f_X\left(\sqrt{\frac{y+1}{3}}\right)$

☐ $f_Y(y) = \frac{1}{3} \cdot \sqrt{\frac{y+1}{3}} f_X\left(\sqrt{\frac{y+1}{3}}\right)$

☒ $f_Y(y) = \frac{1}{3} \cdot \sqrt{\frac{3}{y+1}} f_X\left(\sqrt{\frac{y+1}{3}}\right)$ ✓

☐ $f_Y(y) = \frac{1}{3} \cdot \frac{y+1}{3} f_X\left(\sqrt{\frac{y+1}{3}}\right)$

Lec. 12: Sums of independent r.v.'s; Covariance and correlation

Exercises 12 due Mar 30, 2016 at 23:59 UTC

Lec. 13: Conditional expectation and variance revisited; Sum of a random number of independent r.v.'s

Exercises 13 due Mar 30, 2016 at 23:59 UTC

Solved problems

Additional theoretical material

Problem Set 6

Problem Set 6 due Mar 30, 2016 at 23:59 UTC

Unit summary

$$f_Y(y) = \frac{1}{3} \cdot \frac{3}{y+1} f_X\left(\sqrt{\frac{y+1}{3}}\right)$$

You have used 2 of 2 submissions

DISCUSSION

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