14. Exercise: Normal random variables

Exercises due Mar 13, 2020 05:29 IST *Completed*

Exercise: Normal random variables

1/1 point (graded)

Choose the correct answer below.

According to our conventions, a normal random variable $X \sim N(\mu, \sigma^2)$ is a continuous random variable

- ◯ always.
- ◉ if and only if $\sigma \neq 0$.
- ◯ if and only if $\mu \neq 0$ and $\sigma \neq 0$.

✔

Solution:

When $\sigma \neq 0$, the distribution of X is described by a PDF, and so X is a continuous random variable. But when $\sigma = 0$, then X has all of its probability assigned to a single point, and therefore it is not a continuous random variable. (For continuous random variables, any single point must have zero probability.)

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Answers are displayed within the problem

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