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## 6. Probabilty Review: Probability Density Functions

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Homework0 due Feb 8, 2023 08:59 -03 Completed

## Concept Check

3/4 points (graded)

Let  $\mathbf{X}$  be a **continuous** random variable with probability **density** function (pdf)  $f_X(x)$ 

1. Does the value of  $f_X(x)$  always lie within the interval  $[0, 1]$ ? (Recall  $[0, 1]$  is the set of numbers between 0 and 1 including the end point 0 and 1.)

☒ yes☐ no

2. For  $a < b$ ,  $\int_a^b f_X(x) dx \in [0, 1]$  and represents the probability that the value of  $\mathbf{X}$  lies between  $a$  and  $b$ . (Recall the notation  $y \in [0, 1]$  means  $0 \leq y \leq 1$ )

☒ yes☐ no

3. Is the value of  $f_X(x)$  always non-negative?

☒ yes☐ no**edX**[About](#)[Affiliates](#)[edX for Business](#)[Open edX](#)[Careers](#)[News](#)

4. The value of integral  $\int_{-\infty}^{\infty} f_X(x) dx$  of  $f_X(x)$  from  $-\infty$  to  $\infty$  is a finite unknown

☐ yes☒ no

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