

probability density function

exercise 1

Let X be a continuous random variable with probability density function $f(x) = 3x^2$, $0 \leq x \leq 1$

- (a) Verify that $f(x)$ is a valid probability function
- (b) What is $P(1/2 \leq X \leq 1)$?
- (c) What is $P(X = 1/2)$?

exercise 2

Let X be a continuous random variable with probability density function $f(x) = \frac{x^3}{4}$ for $0 \leq X \leq c$.

What is the value of the constant c that makes $f(x)$ a valid probability density function?

cumulative distribution function

