Exercise: A mixed random variable

(1/1 point)

A lightbulb is installed. With probability $1/3$, it burns out immediately when it is first installed. With probability $2/3$, it burns out after an amount of time that is uniformly distributed on $[0, 3]$. The expected value of the time until the lightbulb burns out is

1

✔ **Answer:** 1

Answer:
The expected value of a uniform on $[0, 3]$ is $3/2$. Using the definition of expectation of mixed random variables, the expected value is

$$\frac{1}{3} \cdot 0 + \frac{2}{3} \cdot \frac{3}{2} = 1.$$

You have used 1 of 2 submissions

Lec. 10: Conditioning on a random variable; Independence; Bayes' rule
Exercises 10 due Mar 16, 2016 at 23:59 UT

Standard normal table

Solved problems

Problem Set 5
Problem Set 5 due Mar 16, 2016 at 23:59 UT

Unit summary