

DISCRETE RANDOM VARIABLES: PRACTICE 3: POISSON DISTRIBUTION*

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Abstract

This module provides further practices and exercises on Poisson Distribution in statistics.

1 Student Learning Objectives

- The student will investigate the properties of a Poisson distribution.

2 Given

On average, ten teens are killed in the U.S. in teen-driven autos per day (USA Today, 3/1/2005). As a result, states across the country are debating raising the driving age.

3 Interpret the Data

Exercise 1

In words, define the Random Variable X .

Exercise 2

$X \sim$ _____

(Solution on p. 3.)

Exercise 3

What values does X take on?

(Solution on p. 3.)

Exercise 4

For the given values of X , fill in the corresponding probabilities.

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x	$P(X=x)$
0	
4	
8	
10	
11	
15	

Table 1**Exercise 5***(Solution on p. 3.)*

Is it likely that there will be no teens killed in the U.S. in teen-driven autos on any given day? Numerically, why?

Exercise 6*(Solution on p. 3.)*

Is it likely that there will be more than 20 teens killed in the U.S. in teen-driven autos on any given day? Numerically, why?

Solutions to Exercises in this Module

Solution to Exercise 2 (p. 1)

$P(10)$

Solution to Exercise 3 (p. 1)

0,1,2,3,4,...

Solution to Exercise 5 (p. 2)

No

Solution to Exercise 6 (p. 2)

No

