

DISCRETE RANDOM VARIABLES: PRACTICE 4: GEOMETRIC DISTRIBUTION*

Susan Dean
Barbara Illowsky, Ph.D.

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Abstract

This module provides further practice with topics of Geometric Distribution in Statistics.

1 Student Learning Objectives

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

2 Given:

Use the information from the Binomial Distribution Practice¹. Suppose that you will randomly select one freshman from the study until you find one who expects to work full-time while in college. You are interested in the number of freshmen you must ask.

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

Construct the probability distribution function (PDF) for X . Stop at $X = 6$.

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¹"Discrete Random Variables: Practice 2: Binomial Distribution" <<http://cnx.org/content/m17107/latest/>>



x	$P(X=x)$
0	
1	
2	
3	
4	
5	
6	

Table 1

Exercise 5

(Solution on p. 3.)

On average(μ), how many freshmen would you expect to have to ask until you found one who expects to work full-time while in college?

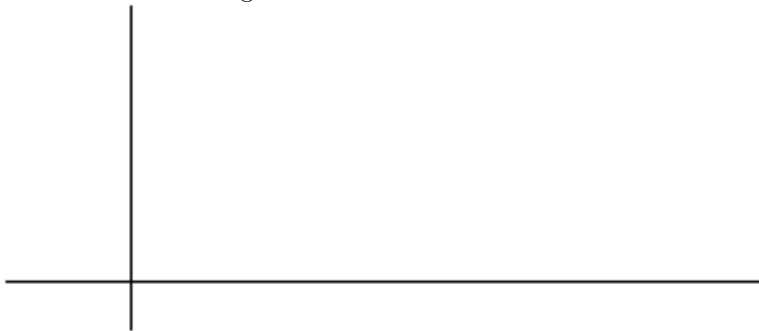
Exercise 6

(Solution on p. 3.)

What is the probability that you will need to ask fewer than 3 freshmen?

Exercise 7

Construct a histogram or plot a line graph. Label the horizontal and vertical axes with words. Include numerical scaling.



Solutions to Exercises in this Module

Solution to Exercise 2 (p. 1)

$G(0.367)$

Solution to Exercise 3 (p. 1)

0,1,2,...

Solution to Exercise 5 (p. 2)

2.72

Solution to Exercise 6 (p. 2)

0.5993

