

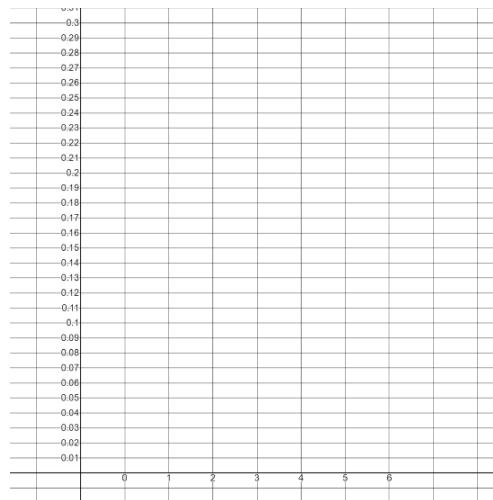
4.1.1: Exercises

1. A program at a local community college wants to evaluate its attrition rate, this is the number of semesters a student remains in the program. Over the years, they have established the following probability distribution.

a. Using what you know about probability distributions, find $P(4)$ and enter it in the table below.

$x =$ the number of semesters a student will remain in the program	0	1	2	3	4	5	6
$P(x)$	0.12	0.18	0.30	0.15		0.10	0.05

b. Graph the probability histogram. Be sure to label the axes.



Images are created with the graphing calculator, used with permission from Desmos Studio PBC.

c. Find the probability that a student remains in the program for more than 3 semesters. Use probability notation in your answer.

d. Find the proportion of students who remain in the program for at most 3 semesters. Use probability notation in your answer.

e. On average, how long do you expect a student to remain in the program? Include units in your answer.

2. You set up a booth at a local fund-raising event. The game consists of rolling two six-sided dice. The dice are fair, so each individual roll of one die has a probability of $1/6$. Players pay \$5 per roll. A player who rolls a 2 or a 3 wins a prize that costs you \$3. Players who roll an 11 or 12 win a prize that costs you \$8. Players who roll other numbers win nothing. An average of 30 guests play your game each hour, and the event will go on for 8 hours. How much money do you expect to raise during the event? Use the table below to help guide your thinking.

Roll	2, 3	4, 5, 6, 7, 8, 9, 10	11, 12
How much money you make or lose			
Probability from roll			

3. If A and B are mutually exclusive, then find the probability of A and B .

4. The proportion of tweets made by adults in the US that are political is 33%.
- Compute the proportion of tweets made by adults in the US that are not political.
 - You randomly read 5 tweets made by adults in the US. What is the probability that all 5 tweets are political? Assume the events are independent. Round to four decimal places.
 - You randomly read 5 tweets made by adults in the US. What is the probability that all 5 tweets are not political? Assume the events are independent. Round to four decimal places.
 - You randomly read 5 tweets made by adults in the US. What is the probability that at least one of the 5 tweets are political? Round to four decimal places.
5. Write a learning strategy that you haven't tried yet that you are interested in.

This page titled [4.1.1: Exercises](#) is shared under a [CC BY-NC-SA 4.0](#) license and was authored, remixed, and/or curated by [Hannah Seidler-Wright](#).

- [Current page](#) by Hannah Seidler-Wright is licensed [CC BY-NC-SA 4.0](#).
- [1.2: The Statistical Analysis Process](#) by Hannah Seidler-Wright is licensed [CC BY-NC-SA 4.0](#).