Probability Topics: Practice II*

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Abstract

This module allows students to practice using what they've learned about Probability. Students will apply their understanding of basic probability terms, calculate probabilities based on the data provided, and determine whether events are independent or mutually exclusive.

1 Student Learning Outcomes

- Students will define basic probability terms.
- Students will calculate probabilities.
- Students will determine whether two events are mutually exclusive or whether two events are independent.

NOTE: Use probability rules to solve the problems below. Show your work.

2 Given

48% of all Californians registered voters prefer life in prison without parole over the death penalty for a person convicted of first degree murder. Among Latino California registered voters, 55% prefer life in prison without parole over the death penalty for a person convicted of first degree murder. (*Source: http://field.com/fieldpollonline/subscribers/Rls2393.pdf*).
37.6% of all Californians are Latino (*Source: U.S. Census Bureau*).

In this problem, let:

- C = Californians (registered voters) preferring life in prison without parole over the death penalty for a person convict
- L = Latino Californians

Suppose that one Californian is randomly selected.

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3 Analyze the Data

Exercise 1 *(Solution on p. 3.)*
$P(C) =$

Exercise 2 *(Solution on p. 3.)*
$P(L) =$

Exercise 3 *(Solution on p. 3.)*
$P(C|L) =$

Exercise 4
In words, what is " $C \mid L$"?

Exercise 5 *(Solution on p. 3.)*
$P(L \text{ AND } C) =$

Exercise 6
In words, what is "L and C"?

Exercise 7 *(Solution on p. 3.)*
Are L and C independent events? Show why or why not.

Exercise 8 *(Solution on p. 3.)*
$P(L \text{ OR } C) =$

Exercise 9
In words, what is "L or C"?

Exercise 10 *(Solution on p. 3.)*
Are L and C mutually exclusive events? Show why or why not.

Solutions to Exercises in this Module

Solution to Exercise (p. 2)
0.48
Solution to Exercise (p. 2)
0.376
Solution to Exercise (p. 2)
0.55
Solution to Exercise (p. 2)
0.2068
Solution to Exercise (p. 2)
No
Solution to Exercise (p. 2)
0.6492
Solution to Exercise (p. 2)
No