

PROBABILITY TOPICS: PRACTICE 2; BASIC PROBABILITY

Student learning Outcomes:

- Students will define basic probability terms .
- Students will practice calculating probabilities.
- Students will differentiate between independent and mutually exclusive events.

GIVEN:

68% of Californians support the death penalty. A majority of all racial groups in California support the death penalty, except for black Californians, of whom 45% support the death penalty (source: San Jose Mercury News, 12/2005). 6% of all Californians are black (source: U.S. Census Bureau).

ANALYZE THE DATA:

Use probability rules to solve the problems below. Show your work.
In this problem, let:

C= Californians that support the death penalty
B= black Californians

Suppose that one Californian is randomly selected.

1. $P(C) =$ _____
2. $P(B) =$ _____
3. $P(C | B) =$ _____ In words, what is “C | B”?
4. In words, what is “C | B”?
5. $P(B \text{ and } C) =$ _____ Show your work.
6. In words, what is “B and C”?
7. Are B and C independent events? _____ Show why or why not.

8. $P(B \text{ or } C) =$ _____ Show your work.

9. In words, what is “B or C”?

10. Are B and C mutually exclusive events? _____ Show why or why not.