

Answers

Below is a hypothetical joint distribution for an econ 2090 class. Event A represents students who purchased the recommended textbook for the class. Event B consists of male students.

Gender	Event A	Event $\bar{A}$	Total
Event B	2	6	
Event $\bar{B}$	4	12	
Total			

- A. What is the number of observations?
B. Generate the joint probability distribution. (Use the equally likely approach).

Gender	Event A	Event $\bar{A}$	Marginal Probability
Event B			
Event $\bar{B}$			
Marginal Probability			

- C. What is the probability a student in the distribution is a male?
D. What is the probability a student is not male?
E. What is the probability of being a male who purchased the textbook?
F. What is $P(A \cap B)$?
G. *Given* that a student is male, what is the probability the student purchased the textbook?
H. $P(A | B) =$
I. Compare $P(A)$ to $P(A | B)$.
J. Compare $P(A)$ to $P(A | \bar{B})$.

- K. Does the probability of purchasing the textbook depend on a person's gender?
- L. If your answer to part K is "no", does that contradict the fact that more people who were not male purchased the textbook than those who were male?