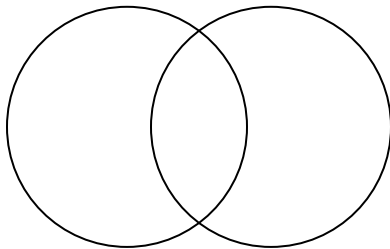


A.P. Statistics
Assignment 4.5

Remember to show your thinking through your work.

- 1) Spokane Builders has bid on two large construction projects. The company's advisor believes that the probability of winning the first contract is 0.7 and the probability of winning the second contract is 0.4. He further believes that there is a 0.2 chance that the company will win both contracts. Use a Venn Diagram to determine the probability that Spokane Builders wins at least one of the two contracts.



- 2) People get caffeine from a variety of sources: coffee, tea and caffeine soda. Suppose that among adults, 55% drink coffee, 25% drink tea, and 45% drink soda. Furthermore, 15% drink coffee and tea, 25% drink coffee and soda, 5% drink tea exclusively, and 5% drink all three beverage types. Use a Venn Diagram to answer the following questions.

- a) What percent of adults drink only coffee?

- b) What percent of adults drink only soda?

- c) What percent of adults drink none of the beverage types?

- 3) Among students, a survey found that 30% of students like Eminem and 80% of students like The Dave Matthews Band. Also, 12% of students liked both Eminem and The Dave Matthews Band. Use a Venn Diagram to answer the following questions.

- a) What percent of students like The Dave Matthews Band but not Eminem?

- b) What percent of students like Eminem but not The Dave Matthews Band?

- c) What percent of students like neither Eminem nor The Dave Matthews Band?

- 4) Given the following:

$$P(A) = 0.72$$

$$P(B) = 0.28$$

$$P(A \cap B) = 0.14$$

Find each of the following.

- a) $P(A \cup B)$ This is a notation for the probability of A or B.

- b) $P(A^c)$ This is a notation for the probability of the complement of A.

- c) $P(B^c)$

- d) $P(A^c \cap B^c)$ This is a notation for the probability of the complement of A and the complement of B (or neither A nor B).

- e) $P(A \cap B^c)$

- f) $P(A^c \cap B)$

