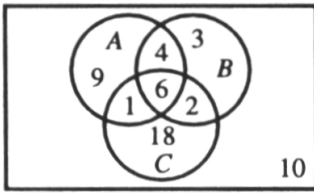
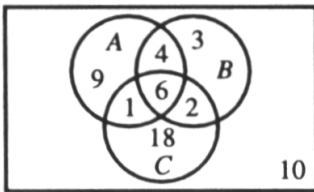


SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 1) Consider the Venn diagram below. Find  $n((A \cap B) \cup C)$ .



- 2) Consider the Venn diagram below. Find  $n(A \cap B)'$ .



- 3) Let  $n(U) = 100$ ,  $n(A) = 20$ ,  $n(A \cup B) = 70$ , and  $n(A \cap B) = 5$ .  
 (a) Draw a Venn diagram displaying the given sets and the number of elements in each basic region.  
 (b) Determine  $n(B)$ .  
 (c) Determine  $n(A' \cup B')$ .

- 4) Let  $n(U) = 53$ ,  $n(A) = 20$ ,  $n(B) = 15$ ,  $n(C) = 27$ ,  $n(A \cap B) = 10$ ,  $n(A \cap C) = 7$ ,  $n(B \cap C) = 8$ , and  $n(A \cap B \cap C) = 6$ .  
 (a) Draw a Venn diagram displaying the given data and the number of elements in each basic region.  
 (b) Determine  $n(A \cap B \cap C')$ .  
 (c) Determine  $n((A \cup B \cup C)')$ .

Solve the problem.

- 5) A certain jewelry store has 1000 customers, each of whom buys gold or diamonds. Suppose that 645 buy gold and 240 buy gold and diamonds.  
 (a) How many customers buy only diamonds?  
 (b) How many buy something other than gold or diamonds?

- 6) A certain clinic has 400 patients, each of whom is being treated for heart disease or diabetes. Suppose that 300 are treated for heart disease and 75 are treated for heart disease and diabetes.  
 (a) How many patients are treated for diabetes?  
 (b) How many patients are treated only for heart disease?

A survey was made to determine the popularity of hockey, baseball and football. Of those surveyed, 35% watched hockey, 58% watched baseball, and 47% watched football. 15% watched hockey and baseball, 20% watched baseball and football, and 22% watched hockey and football. 7% watched all three sports.

- 7) What percentage of those surveyed only watched baseball?  
 8) What percentage watched hockey and football, but not baseball?  
 9) What percentage watched none of the three sports?

Solve the problem.

- 10) A grand jury questioned 70 persons. Forty were lawyers, 23 were women, and 21 were under indictment. There were 12 female lawyers, 5 indicted women, and 14 indicted lawyers. Two of the indicted lawyers were women.  
 (a) Draw a Venn diagram displaying the given data and the number of elements in each basic region.  
 (b) How many of the lawyers were not under indictment?  
 (c) How many of the indicted women were not lawyers?