For Problems 1-10. Let $U = \{1,2,3,4,5,6,7,8,9,10\}$, $A = \{2,3,5,7\}$, $B = \{1,4,7,10\}$, and $C = \{1,3,4,7,8,9,10\}$.

1. Draw a Venn diagram depicting these sets.
2. Find $A \cup (B' \cap C)$.
3. Find $A \cap (B \cap C')'$.
4. Find $(A \cap C') \cup (B \cap C')$.
5. Find $(B \cap A')'$.
6. Find $(A')'$.
7. List all subsets of A.
8. List all three-element subsets of B.
9. How many proper subsets does B have?
10. In how many different orders can we list the elements of B?
11. True or false?
    (a) If $A \subseteq B$, then $n(A) \leq n(B)$.
    (b) Every rectangle is a parallelogram.
    (c) Every rectangle is a trapezoid.
12. Let $U = \{a,b,c,d,e,f,g,h,i,j\}$, $A = \{b,e,f,h,i\}$, $B = \{c,d,e,g,h\}$, and $C = \{b,d,f,h,j\}$.
    (a) Draw a Venn diagram depicting these sets.
    (b) Find $A \cup (B' \cap C) =$
    (c) Find $B \cap (A \cap C')' =$
    (d) Find $(A \setminus C) \cup (C \setminus A) =$
    (e) How many four-element subsets does U have?
13. Find $n(S)$ if we know that $n(T) = 11$, $n(S \cup T) = 19$, and $n(S \cap T) = 4$.
14. Find $n(A \cup B)$ if we know that $n(A) = 23$, $n(B) = 16$, and $n(A \cap B) = 9$.
15. We toss a coin eight times in a row.
    (a) How many different outcomes are possible?
    (b) How many different outcomes are possible with exactly 2 tails?
    (c) How many different outcomes are possible with six or less tails?
16. Find the sum of the angles in a polygon of 13 sides.
17. Sally got a 7% raise in her job. Now she is making $ 1926 per month. What was her initial pay?

18. The population of a town has decreased from 85000 to 78200. What percent of a change does this represent?

19. A TV set went on a 14% sale. The sale price is $ 653. 60. Find the original price.

20. Find the measure of an inner angle in a regular polygon of 18 sides.

21. We throw a die twice.

    (a) How many different outcomes are possible?

    (b) List all outcomes where the sum of the two numbers rolled is 10.

22. We borrowed $5000 for a year, with a simple annual interest rate of 7%.

    (a) How much do we have to pay back at the end of the year?

    (b) Suppose that we are able to pay back the loan after 6 months. How much do we have to pay then?

23. There are 25 people in a room.

    (a) If everyone shakes hands with everyone else in the room, how many handshakes took place?

    (b) If there is a contest, how many different outcomes are possible for the list of first, second, and third place?

    (c) If the people are to select a three-person committee, how many different ways is that possible?

24. True or false?

    (a) If $A \subseteq B$, then $A \cap B = B$.

    (b) Every square is a parallelogram.

    (c) Every parallelogram is a trapezoid.

    (d) If $A \subseteq B$ and $B \subseteq A$, then $A = B$.

25. We asked 30 students about their soda preferences. Among these students, 21 liked Pepsi and 22 liked Coke. 16 liked both Pepsi and Coke. How many students liked neither of these drinks?