For Problems 1-12. Let  $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ ,  $A = \{1, 3, 5, 7\}$ ,  $B = \{1, 3, 4, 6, 8\}$ , and  $C = \{1, 4, 5, 6, 7, 9\}$ 

- 1. True or false?
  - (a)  $A \subseteq (B \cup C)$ (b)  $9 \in A'$ (c)  $B' \cap C' = (B \cup C)'$
- 2. Draw a Venn diagram depicting these sets.
- 3. Find  $A \cap B \cap C$
- 4. Find  $C \cap (B \cup A)$
- 5. Find  $B \cap C'$
- 6. Find  $A' \cup B'$
- 7. Find  $(A \cap B)'$
- 8. Find  $(B \cap C') \cup C$
- 9. Find  $(A \cap B') \cup (C \cap B')$
- 10. Find  $n(A \cup C)$
- 11. List all two-element subsets of C.
- 12. How many subsets does U have?
- 13. Find  $n(X \cup Y)$  if we know that n(X) = 8, n(Y) = 14, and  $n(x \cap Y) = 5$ .
- 14. Find n(X) if we know that n(Y) = 20, and  $n(x \cap Y) = 6$ , and  $n(X \cup Y) = 30$ .
- 15. The supplement of an angle is  $4^{\circ}$  more than three times the angle. Find the angle.
- 16. The largest angle of a triangle is  $70^{\circ}$ . Find the other two angles if we know that they differ by  $6^{\circ}$ .
- 17. The sum of the inner angles of a polygon is 5580°. How many sides does the polygon have?
- 18. Find the measure of an inner angle in a regular polygon of 16 sides.
- 19. Find the value of x and y, based on the picture below.



20. Find the value of x, based on the picture below.

