3-8

Practice   *Form K*

Unions and Intersections of Sets

Find each union or intersection. Let A = **{0, 2, 4, 6, 8},** B **={***x* / *x* **is a positive even integer less than 12},** C = **{1, 2, 4, 7}, and** D = **{–3, 2}.**

1. $A \cup B$

2. $A \cap C$

3. $A \cap D$

4. $B \cup C$

5. $B \cap D$

6. $C \cup D$

7. $A \cap B \cap C$

8. $D \cup C \cup B$

Draw a Venn diagram to represent the union and intersection of these sets.

9. Let A = {a, b, c, d, e}, B = {a, b, c},
   and C = {b, m, n, p}.

10. Let E = {all negative even integers},
   F = {all negative integers greater than or
   equal to –10}, and G = {–4, –2, 0, 2, 4}.

3-8 Practice (continued) Form K

Unions and Intersections of Sets

11. A child sells lemonade and cookies. Ten customers buy both lemonade and cookies. Fifteen customers buy lemonade. Five customers buy cookies only. There are a total of 20 customers. How many customers only buy lemonade? Draw a Venn diagram to help you solve this problem.

Find each union or intersection.

12. the intersection of {. . . , –2, 0, 2, . . . } and {1, 2, 3, . . . }

13. the union of {. . . , –3, –2, –1} and {1, 2, 3, . . .}

14. the intersection of the set of positive integers and the set of negative integers

15. the intersection of the set of the positive factors of 36 and the set of positive factors of 90

16. A salon surveys how many clients use their two additional services— manicures and massages. Thirty-five clients come in for both manicures and massages. Ten clients come in only for massages. Five clients only come in for manicures. How many total clients are represented by the data?