

## 14 CHAPTER 2 FORM A

### Sample Assessment

1. List all the subsets of  $\{2, o, t\}$ .

2. Let  $U = \{x | x \text{ is a female}\}$   
 $A = \{x | x \text{ is a mathematician}\}$   
 $B = \{x | x \text{ owns a pickup}\}$   
 $C = \{x | x \text{ owns a dog}\}$

Describe in words a member of each of the following:

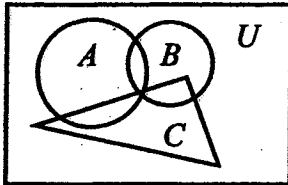
- (a)  $\bar{B}$   
(b)  $B \cup C$   
(c)  $A - C$   
(d)  $\overline{A \cup C}$   
(e)  $B - A$   
(f)  $\bar{A}$

3. Let  $U = \{u, n, i, t, e\}$   
 $A = \{n, i, t\}$   
 $B = \{n, e\}$   
 $C = \{u, n, i, t, e\}$   
 $D = \{u, e\}$

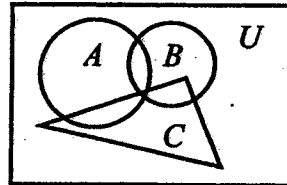
Find each of the following:

- (a)  $A \cap B$   
(b)  $C \cup D$   
(c)  $\bar{D}$   
(d)  $\overline{A \cup D}$   
(e)  $B \cap \bar{C}$   
(f)  $(B \cap C) \cap D$   
(g)  $(A \cap B) \cap (C \cup D)$   
(h)  $(C - D) \cap \bar{A}$   
(i)  $n(C)$   
(j)  $n(C \cup D)$

4. Indicate the following sets by shading.



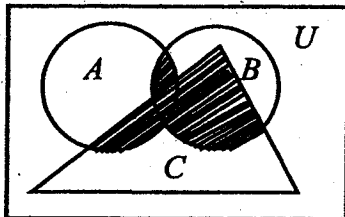
(a)  $(A \cup B) \cup C$



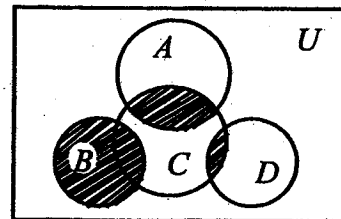
(b)  $A \cap (B \cup C)$

5. Let  $C = \{p, l, u, s\}$ . How many proper subsets does  $C$  have?
6. How many possible one-to-one correspondences are there between sets  $D$  and  $E$  if  $D = \{w, h, y\}$  and  $E = \{n, o, t\}$ ?
7. How many elements are there in the Cartesian product of sets  $D$  and  $E$  in Problem 6?
8. Use a Venn diagram to determine whether  $A \cup (B - C) = (B \cup A) - C$  for all sets  $A$ ,  $B$ , and  $C$ .

9. Describe using symbols, the shaded portion in each of the following:



(a)



(b)