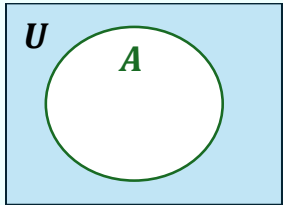
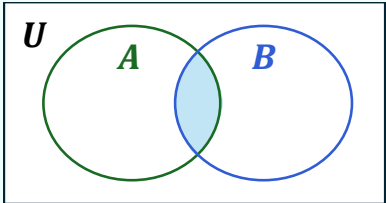
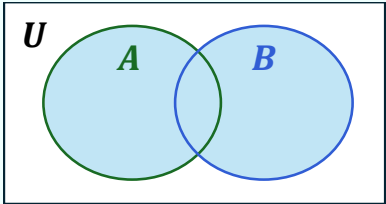


CHAPTER RESOURCE

Symbols & Vocab

Name	Symbol	Definition &/or Venn Diagram	Example
<i>Element Of</i>	$\in$	An object is an element of a set A if it belongs in A	$2 \in \{1, 2, 3, 4\}$
<i>Empty Set</i>	$\emptyset, \{\}$	The set containing no elements	The set of numbers greater than 20 and less than 10.
<i>Universal Set</i>	U	The set of everything relevant to a situation or problem	A = the set of land animals B = the set of water animals U = the set of animals
<i>Subset</i>	$\subseteq$	A set, B , is a subset of A , if B only contains elements that are also in A	$\{1, 2\} \subseteq \{1, 2, 3, 4\}$ $\{3, 5\} \not\subseteq \{1, 2, 3, 4\}$
<i>Proper Subset</i>	$\subset$	A proper subset is any subset of a set A that is not equal to A itself	$\{1, 2\} \subset \{1, 2, 3, 4\}$ $\{1, 2\} \not\subset \{1, 2, 3, 4\}$
<i>Complement</i>	A'	The complement of a set, A , is the set of all elements not in A	
<i>Intersection</i>	$\cap$	The intersection of two sets (A , B) is the set of all elements in both sets A and B	
<i>Union</i>	$\cup$	The union of two sets (A , B) is the set of all elements in either set A or B (or both)	

TOPIC: BASIC SET CONCEPTS & NOTATION

Roster Method

◆ Sets are often represented using the **roster method**:

New	Roster Method
Set name is a _____ letter	Brace = "The set of" A = {2, 4, 6, 8, ..., 16, 18} Commas _____ each element Ellipses = "The _____ continues" "A is the set of positive, even numbers, less than 20."

EXAMPLE

Write a word description for each set. *Note: Multiple answers could be correct.*

(A) $R = \{\text{red, orange, yellow, green, blue, purple}\}$

(B) $F = \{5, 10, 15, 20, \dots\}$

PRACTICE

Fill in the blank with $\in$ or $\notin$ to make the statement true.

(A) $15 \underline{\hspace{1cm}} \{3, 6, 9, 12, \dots\}$

(B) $D \underline{\hspace{1cm}} \{A, C, E, G, \dots\}$

TOPIC: BASIC SET CONCEPTS & NOTATION

EXAMPLE

Write a description for each set. (There can be multiple correct answers).

(A) {do, re, mi, fa, so, ...}

(B) {3, 5, 7, ...}

PRACTICE

Given the description of a set, write it using the Roster Method.

(A) "The set of letters that can be vowels in the English alphabet."

(B) "The set of prime numbers less than 15."

PRACTICE

Determine if each statement is true or false.

(A) {M, N, P} = {P, N, M}

(B) The set of all even numbers is {2, 4, 6, 8}

EXAMPLE

The table below shows the favorite type of pet of several students.

Using the Roster Method, define the following sets.

(A) Let A be the set of students listed in the table.

(B) Let B be the set of favorite pets shown in the table.

(C) Let C be the set of students whose favorite pet is a cat.

Student	Favorite Pet
Alfred	Dog
Luke	Cat
May	Dog
Noah	Fish
Eugene	Cat
Yana	Bird