

Set Language & Notation Assessment

Instructions: Answer all questions in the spaces provided. Show your work where applicable.

Section A: Multiple Choice

Choose the correct symbol or answer for each question.

- Given $A = \{a, b, c\}$ and $B = \{a, b, c, d, e, f\}$, which statement correctly describes the relationship between A and B ?
 - $A \subseteq B$
 - $A \subset B$
 - $A \cup B$
 - $A \cap B$
- If set $X = \{1, 2, 3\}$ and set $Y = \{1, 2, 3\}$, what notation represents their relationship?
 - $X \subset Y$
 - $X \subseteq Y$
 - $X' = Y$
 - $n(X) = Y$
- What does the notation $n(P)$ represent?
 - The complement of set P
 - The subset of set P
 - The number of elements in set P
 - The union of set P
- Which symbol is used to represent the set of elements that do not belong to set A ?
 - $\cup$
 - $\cap$
 - $\subset$
 - A'

Section B: Short Answer & Calculations

Given the following sets:

- $A = \{a, b, c\}$
- $B = \{a, b, c, d, e, f\}$
- $D = \{c, d, e\}$

5. State the value of:

- a) $n(A) = \underline{\hspace{2cm}}$
- b) $n(B) = \underline{\hspace{2cm}}$

6. List the elements of the following sets:

- a) $A \cup D = \{ \underline{\hspace{2cm}} \}$
- b) $A \cap D = \{ \underline{\hspace{2cm}} \}$

7. If the Universal Set U consists of all letters in the English alphabet, and $V = \{\text{Vowels}\}$, write out the set description for V' :

$$V' = \{ \underline{\hspace{2cm}} \}$$

Section C: True or False & Definitions

8. True or False: An improper subset occurs when the super set has the same number of elements as the sub set (e.g., $A = \{a, b, c\}$ and $C = \{a, b, c\}$, so $A \subseteq C$).

Answer: _____

9. Explain in your own words the difference between the Union ($\cup$) and Intersection ($\cap$) of two sets.

Union (U): _____

Intersection ($\cap$): _____