

Computer Science 2400
Fall 2021
Practice Quiz 3a
Sets

For each yes/no question, circle yes or no.

1. Suppose $A = \{2, 4\}$ and $B = \{2, 5, 6\}$.
 - (a) Enumerate the members of $A \cup B$ (in braces).

 - (b) Enumerate the members of $A \cap B$ (in braces).

 - (c) Is $2 \in A$? **yes no**
 - (d) Is $\{2\} \in A$? **yes no**
 - (e) Is $\{2, 4\} \subseteq A$? **yes no**
 - (f) Is $A \subseteq B$? **yes no**
 - (g) Is $\{\} \subseteq B$? **yes no**
 - (h) Is $\{\} \in B$? **yes no**

2. What set is $\{x \in \{2, 3, 4, 5, 6\} \mid x \text{ is a prime number}\}$? List the members of the answer set, in braces.

3. Is $A \times B \subseteq A \times B \times C$ for all sets A , B and C ? **yes no**
(Hint. Try it for $A = \{1\}$, $B = \{2\}$ and $C = \{3\}$.)

4. How many members does the powerset of $\{\}$ have?

5. Suppose $A = \{2\}$ and $B = \{3, 4\}$.
 - (a) What is $A \times B$? (List the members, in braces.)

(b) What is the powerset of $A \times B$? (List the members, in braces.)

6. What is $|\{10, \{10\}\}|$?

7. Use a membership table to prove: $(A \cap B) \cap C = A \cap (B \cap C)$ for all sets A , B and C .