Math 270 - Basic Discrete Mathematics
Practice Quiz on Section 1.2
Solutions

Directions: Answer problems 1-4 given below.

1. Let $A = \{1, 2, 3, 4, 5, 6, 7, 8\}$. Write the following sets in set-roster notation.

a. $X = \{x \in A \mid x \text{ is even }\}$

$X = \{2, 4, 6, 8\}$

b. $Y = \{y \in A \mid 3 < y \leq 7\}$

$Y = \{4, 5, 6, 7\}$

2. Again, let $A = \{1, 2, 3, 4, 5, 6, 7, 8\}$. Write the following sets in set-builder notation.

a. $B = \{1, 3, 5, 7\}$

$B = \{b \in A \mid b \text{ is odd}\}$

b. $C = \{2, 3, 4\}$

$C = \{c \in A \mid 2 \leq c \leq 4\}$

3. Write $\{1, 2, 3\} \times \{x, y\}$ in set-builder notation.

$\{1, 2, 3\} \times \{x, y\} = \{(1, x), (2, x), (3, x), (1, y), (2, y), (3, y)\}$

4. Answer the following (no justification required).

a.   Is $2 \in \{2\}$?   Yes

b.   Is $2 \subseteq \{2\}$?   No, "2" is not a set.

c.   How many elements are in the set $\{2, \{2, 2\}\}$?

Two: 2 and $\{2\}$

$(\{2, 2\} = \{2\})$.