

$$4) U = \{-7, -3, -1, 0, 5, 6, 8, 9\}$$

$$i) A = \{x : x < 2\}$$

$$\text{Ans) } A = \{-7, -3, -1, 0\}$$

$$ii) B = \{x : -4 < x < 6\}$$

$$\text{Ans) } B = \{-3, -1, 0, 5\}$$

5) $U = \{x : x \in \mathbb{N} \text{ and } x < 20\}$

Ans $U = \{1, 2, 3, \dots, 19\}$

i) $A = \{x : x = 3p; p \in \mathbb{N}\}$

Ans $A = \{3 \times 1, 3 \times 2, 3 \times 3, 3 \times 4, 3 \times 5, 3 \times 6\}$

$A = \{3, 6, 9, 12, 15, 18\}$

ii) $B = \{y : y = 2n + 3, n \in \mathbb{N}\}$

Ans $B = \{2 \times 1 + 3, 2 \times 2 + 3, 2 \times 3 + 3, 2 \times 4 + 3, 2 \times 5 + 3, 2 \times 6 + 3, 2 \times 7 + 3, 2 \times 8 + 3\}$

$B = \{5, 7, 9, 11, 13, 15, 17, 19\}$

iii) $C = \{x : x \text{ is divisible by } 4\}$

Ans $C = \{4, 8, 12, 16\}$

6) $\{x : x^2 - 9x - 10 = 0\}$.

Ans $x^2 - 9x - 10 = 0$

$\Rightarrow x^2 + x - 10x - 10 = 0$

Date: _____
Page: _____

$$\Rightarrow x(x+1)(x-10) = 0$$

$$\Rightarrow x = -1, x = 10$$

Proper subset = $\phi, \{10\}, \{-1\}$

$$\exists) A = \{\text{Triangles}\}$$

$$B = \{\text{Isosceles triangle}\}$$

$$C = \{\text{Equilateral triangles}\}$$

i) $A \subset B$

Ans) False, because each triangle is not isosceles.

ii) $B \subset A$

Ans) True, each isosceles triangles are triangle

iii) $C \subset B$

Ans) True, each equilateral triangle are isosceles.

iv) $B \subset A$

Ans) True, each isosceles triangle is a triangle.

v) $C \subset A$

Ans) True, each equilateral triangle are triangles, but each

triangle are not equilateral.

vi) $C \subseteq B \subseteq A$

Ans) True, each equilateral are isosceles and each isosceles are triangle.

8) $A = \{ \text{Quadrilaterals} \}$

$B = \{ \text{Rectangles} \}$

$C = \{ \text{Squares} \}$

$D = \{ \text{Rhombuses} \}$

i) $B \subseteq C$

Ans) False, all rectangles are not square.

ii) $D \subseteq B$

Ans) False, each rectangle is not a rhombus.

iii) $C \subseteq B \subseteq A$

Ans) True, each rectangles are squares and each rectangles are quadrilaterals.

iv) $D \subset A$

Ans) True, each rhombus are quadrilateral, but each quadrilaterals are not ~~are~~ rhombus

v) $B \supseteq C$

Ans) True, since set C is subset of set B.

vi) $A \supseteq B \supseteq D$

Ans) False, each rhombus are not rectangle.