

CW
Friday

Ex. 10 C

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1) Write each of the following sets in the Roster Form:

i) The set of five numbers each of which is divisible by 3.

Ans) $A = \{3, 6, 9, 12, 15\}$.

ii) The set of integers between -4 and 4 .

Ans) $X = \{-3, -2, -1, 1, 2, 3\}$.

iii) $\{x: x \text{ is a letter in the word 'SCHOOL'}\}$.

Ans) $B = \{S, C, H, O, O, L\}$.

iv) $\{x: x \text{ is an odd natural number between } 10 \text{ and } 20\}$.

Ans) $C = \{11, 13, 15, 17, 19\}$.

v) $\{\text{vowels used in the word 'AMERICA'}\}$.

Ans) $D = \{A, E, I, O, U\}$.

vi) $\{\text{consonants used in the word 'MADRID'}\}$.

Ans) $F = \{M, D, R, I, S\}$.

2) Write each given set in the Roster Form:

i) All prime numbers between 1 and 20:

Ans) $A = \{2, 3, 5, 7, 11, 13, 17, 19\}$.

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ii) The squares of the first four natural numbers.

Ans $\rightarrow B = \{1^2, 2^2, 3^2, 4^2\} = \{1, 4, 9, 16\}$.

iii) Even numbers between 1 and 9.

Ans $\rightarrow F = \{2, 4, 6, 8\}$.

iv) The first eight letters of the English alphabet.

Ans $\rightarrow E = \{a, b, c, d, e, f, g, h\}$.

3) Write the given set in set-Builder Form:

i) $\{2, 4, 6, 8, 10\}$

Ans $\rightarrow \{x : x \text{ is an even number between } 0 \text{ and } 12\}$.

ii) $\{2, 3, 5, 7, 11\}$

Ans $\rightarrow \{x : x \text{ is a prime number less than } 12\}$.

iii) $\{\text{January, June, July}\}$

Ans $\rightarrow \{x : x \text{ is the name of a month whose letter starts with } j\}$.

iv) $\{a, e, i, o, u\}$

Ans $\rightarrow \{x : x \text{ is the vowel in English Alphabet}\}$.

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i) {Tuesday, Thursday}

Ans \rightarrow { x : x is the name of week whose letter starts with T}.

ii) {1, 4, 9, 16, 25}

Ans \rightarrow { x : x is the perfect natural number square or n^2 upto the n^2 of 5}.

iii) {5, 10, 15, 20, 25, 30}

Ans \rightarrow { x : x is a multiple of 5 upto 30}.

4) Write each of the following sets in Roster Form and also in Set-Builder Form.

i) Set of all natural numbers that can divide 24 completely.

Ans \rightarrow Roster Form \rightarrow {2, 4, 6, 8, 12, 3}. Set-Builder Form \rightarrow

{ x : x is the natural number that can divide 24 completely}.

ii) Set of odd numbers between 20 and 35.

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Ans \rightarrow Roster Form $\rightarrow \{21, 23, 25, 27, 29, 31, 33\}$. Set-builder $\rightarrow \{x: x \text{ is a odd number between } 20 \text{ and } 35\}$.

iii) Roster $\rightarrow \{C, A, L, U, P\}$ Set-builder $\rightarrow \{x: x \text{ is the letter used in the word 'CALUPA'}\}$.

iv) Set of names of the first five months of a year.

Ans \rightarrow Roster $\rightarrow \{\text{January, February, March, April, May}\}$.

Set-builder $\rightarrow \{x: x \text{ is the name of the first five months of a year}\}$

v) Roster $\rightarrow \{16, 25, 36, 49, 64, 81\}$, set-builder $\rightarrow \{x: x \text{ is a perfect square two digit number}\}$.

5) i) The first four odd natural numbers each divisible by 5.

Ans $\rightarrow \{5, 15, 25, 35\}$.

ii) The counting numbers between 15 and 35; each divisible by 6.

Ans $\rightarrow \{18, 24, 30\}$.

iii) $\{\text{Friday, Saturday, Sunday}\}$.

iv) $\{\text{August, September, October, November, December}\}$.

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- * A set is said to be finite if it has limited number of elements. It is known as finite set.
- * Infinite set \rightarrow A set is said to be infinite if it has uncountable number of elements.
- * Empty set \rightarrow If a set has no elements is known as empty set.
- * Equal set \rightarrow If two sets have equal elements they are known as Equal set.
- * Equivalent set \rightarrow Two sets are said to be equivalent if the number of elements in both the sets are equal.

Ex: 10 A

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