Sets Ex 1.2 Q3(iv)

The vowels in the word EQUATION are E, U, A, I, O.

Since the order in which the elements of a set are written is unmaterial, $D = \{A, E, I, O, U\}$

Sets Ex 1.2 Q3(v)

A month has either 28, 29, 30 or 31 days.

Out of the 12 months in a year , the months that have 31 days are: January, March, May, July, August, October, December.

$\therefore E = \{\text{February, April, June, September, November}\}$

Sets Ex 1.2 Q3(vi)

The distinct letters of the word 'MISSISSIPPI' are M, I, S, P

Hence $F = \{M, I, S, P\}$

Sets Ex 1.2 Q4

(i) $\{A, P, L, E\} \leftrightarrow \{x : x \text{ is a letter of the word "APPLE"}\}$

(ii) The solution set of $x^2 - 25 = 0$ is $x = \pm 5$

Hence, $\{-5, 5\} \leftrightarrow \{x : x^2 - 25 = 0\}$

(iii) The solution set of $x + 5 = 5$ is $x = 0$

Hence, $\{0\} \leftrightarrow \{x : x + 5 = 5, x \in Z\}$

(iv) The natural numbers which are divisor of 10 are $1, 2, 5, 10$

Hence, $\{1, 2, 5, 10\} \leftrightarrow \{x : x \text{ is a natural number and divisor of } 10\}$

(v) The distinct letters of the word "RAJASTHAN" are A, H, J, R, S, T, H

Hence, $\{A, H, J, R, S, T, N\} \leftrightarrow \{x : x \text{ is a letter of the word"RAJASTHAN"}\}$

(vi) The prime natural numbers which are divisor of 10 are $2, 5$

Hence, $\{2, 5\} \leftrightarrow \{x : x \text{ is a prime natural number and a divisor of } 10\}$

Sets Ex 1.2 Q5

The vowels which precede q, that is, come before q are a, e, i, o

Hence the set of vowels in the English alphabet which precede q are

$\{a, e, i, o\}$

Sets Ex 1.2 Q6

As the cube of an odd integer is odd, and an odd positive integer has the form $2n + 1$ for some $n \geq 0$,

Hence the set of all positive integers whose cube is odd may be written in set builder form as $\{x \in Z, x = 2n + 1, n \geq 0\}$

Sets Ex 1.2 Q7

As $2 = 1^2 + 1$

$5 = 2^2 + 1$

$10 = 3^2 + 1$

:

:

$50 = 7^2 + 1$

So, the above set in set builder form can be written as

$$\left\{\frac{n}{n^2+1} : n \in N, 1 \le n \le 7\right\}$$

********** END **********