EXERCISE 1.2

1. Which of the following are examples of the null set

(i) Set of odd natural numbers divisible by 2

(ii) Set of even prime numbers

(iii) $\{ x : x$ is a natural numbers, $x < 5$ and $x > 7 \}$

(iv) $\{ y : y$ is a point common to any two parallel lines$\}$

2. Which of the following sets are finite or infinite

(i) The set of months of a year

(ii) $\{1, 2, 3, \ldots\}$

(iii) $\{1, 2, 3, \ldots 99, 100\}$

(iv) The set of positive integers greater than 100

(v) The set of prime numbers less than 99

3. State whether each of the following set is finite or infinite:

(i) The set of lines which are parallel to the x-axis

(ii) The set of letters in the English alphabet

(iii) The set of numbers which are multiple of 5

(iv) The set of animals living on the earth

(v) The set of circles passing through the origin (0,0)

4. In the following, state whether A = B or not:

(i) A = { a, b, c, d } B = { d, c, b, a }

(ii) A = { 4, 8, 12, 16 } B = { 8, 4, 16, 18}

(iii) A = {2, 4, 6, 8, 10} B = { x : x is positive even integer and $x \leq 10$}

(iv) A = { x : x is a multiple of 10}, B = { 10, 15, 20, 25, 30, . . . }

5. Are the following pair of sets equal ? Give reasons.

(i) A = {2, 3}, B = {x : x is solution of $x^2 + 5x + 6 = 0$}

(ii) A = { x : x is a letter in the word FOLLOW}

B = { y : y is a letter in the word WOLF}

6. From the sets given below, select equal sets :

A = { 2, 4, 8, 12}, B = { 1, 2, 3, 4}, C = { 4, 8, 12, 14}, D = { 3, 1, 4, 2}

E = {–1, 1}, F = { 0, a}, G = {1, –1}, H = { 0, 1}