1. Which of the following are sets ? Justify your answer.

   (i) The collection of all the months of a year beginning with the letter J.

   (ii) The collection of ten most talented writers of India.

   (iii) A team of eleven best cricket batsmen of the world.

   (iv) The collection of all boys in your class.

   (v) The collection of all natural numbers less than 100.

   (vi) A collection of novels written by the writer Prem Chand.

   (vii) The collection of all even integers.

   (viii) The collection of questions in this chapter.

   (ix) A collection of most dangerous animals of the world.

2. Let A = {1, 2, 3, 4, 5, 6}. Insert the appropriate symbol ∈ or ∉ in the blank spaces :

   (i) 5......A   (ii) 8.....A

   (iii) 0.....A   (iv) 4....A

   (v) 2....A   (vi) 10....A.

3. Write the following sets in roster form :

   (i) A = {x : x is an integer and $-3 \leq x < 7$}

   (ii) B = {x : x is a natural number less than 6}

   (iii) C = {x : x is a two digit natural number such that the sum of its digits is 8}

   (iv) D = {x : x is a prime number which is divisor of 60}

   (v) E = the set of all letters in the word TRIGONOMETRY

   (vi) F = the set of all letters in the word BETTER.

4. Write the following sets in the set builder form :

   (i) {3, 6, 9, 12}   (ii) {2, 4, 8, 16, 32}

   (iii) {5, 25, 125, 625}   (iv) {2, 4, 6, ...}

   (v) {1, 4, 9,........, 100}.

5. List all the elements of the following sets :

   (i) A = {x : x is an odd natural number}

   (ii) B = $\left\{ x : x \text{ is an integer}, -\dfrac{1}{2} < x < \dfrac{9}{2} \right\}$

   (iii) C = {x : x is an integer, $x^2 \leq 4$}

   (iv) D = {x : x is a letter in the word "LOYAL"}

   (v) E = {x : x is a month of a year not having 31 days}

   (vi) F = {x : x is a consonant in the English alphabet which precedes k}.