1. Let A = {1, 2, 3,...,14}. Define a relation R from A to A by
   R = {(x, y) : 3x − y = 0, where x, y ∈ A}. Write down its domain, codomain and
   range.

2. Define a relation R on the set **N** of natural numbers by R = {(x, y) : y = x + 5, x is a natural number less than 4; x, y ∈**N**}. Depict this relationship using roster form. Write down the domain and the range.

3. A = {1, 2, 3, 5} and B = {4, 6, 9}. Define a relation R from A to B by R = {(x, y): the difference between x and y is odd; x ∈ A, y ∈ B}. Write R in roster form.
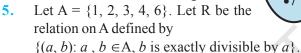
4. The Fig2.7 shows a relationship between the sets P and Q. Write this relation

   (i) in set-builder form (ii) roster form. What is its domain and range?

Fig 2.7

5. Let A = {1, 2, 3, 4, 6}. Let R be the relation on A defined by {(a, b): a , b ∈A, b is exactly divisible by a}.

   (i)   Write R in roster form

   (ii) Find the domain of R

   (iii) Find the range of R.

6. Determine the domain and range of the relation R defined by R = {(x, x + 5) : x ∈ {0, 1, 2, 3, 4, 5}}.

7. Write the relation R = {(x, x³) : x is a prime number less than 10} in roster form.

8. Let A = {x, y, z} and B = {1, 2}. Find the number of relations from A to B.

9. Let R be the relation on **Z** defined by R = {(a,b): a, b ∈ **Z**, a – b is an integer}. Find the domain and range of R.