

Q1. If a matrix has 28 elements, what are the possible orders it can have? What if it has 13 elements?

Soln. We know that, if a matrix is of order  $m \times n$ , it has  $mn$  elements, where  $m$  and  $n$  are natural numbers.

We have,  $m \times n = 28$ .

$$(m, n) = \{ (1, 28), (2, 14), (4, 7), (7, 4), (14, 2), (28, 1) \}$$

So, the possible orders are  $1 \times 28$ ,  $2 \times 14$ ,  $4 \times 7$ ,  $7 \times 4$ ,  $14 \times 2$ ,  $28 \times 1$ .

Also, if it has 13 elements, then  $m \times n = 13$

$$(m, n) = \{ (1, 13), (13, 1) \}$$

$\therefore$  The possible orders are  $1 \times 13$ ,  $13 \times 1$ .