# Number System
## Ex. 1.2

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1 (i) **True**, every irrational number is a real number as the collection of real numbers is made up of rational and irrational numbers.

(ii) **False**, every point on the number line is not of the form $\sqrt{m}$, where 'm' is a natural number as no negative number can be the square root of any natural number.

(iii) **False**, every real number is not an irrational number. e.g. 5 is a real number but not an irrational number.

2. **No**, the square roots of all positive integers are not irrational.
e.g. $\sqrt{9} = 3$, which is a rational number.

3.
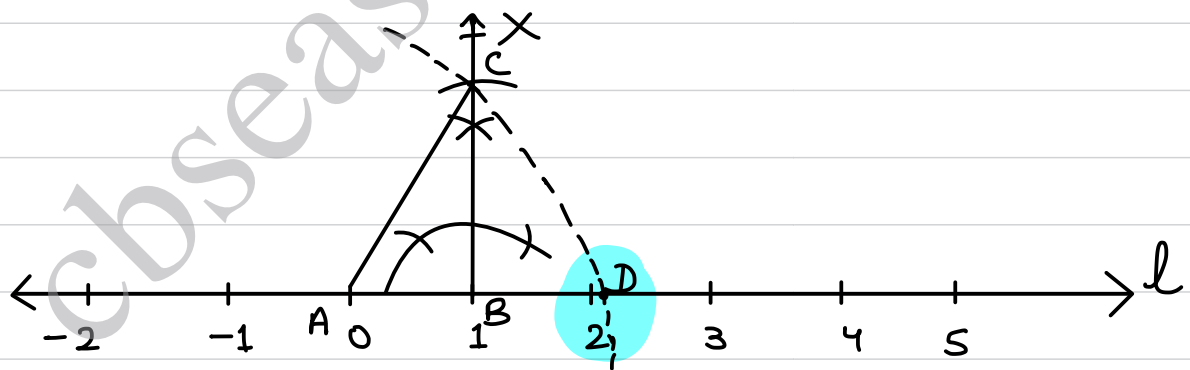


AB = 1 unit,  BC = 2 units

Steps of construction:

1.) Draw a line $l$.

2.) Mark points -—, -2, -1, 0, 1, 2, -—— on the number line at equal distance.

3.) Draw a perpendicular at point B.

4.) With point B as centre and radius = 2 units, draw an arc intersecting BX at point C.

5) Join C and A.

6.) With point A as the centre and radius = AC, draw an arc intersecting line 'l' at point D.

7.) Point D represents $\sqrt{5}$

Justification:

AB = 1 unit

BC = 2 units

Using Pythagoras theorem in $\triangle ABC$

$$AC^2 = AB^2 + BC^2$$
$$AC^2 = 1^2 + 2^2$$
$$AC^2 = 1 + 4$$
$$AC^2 = 5$$
$$AC = \sqrt{5}$$

5.) Classroom activity for drawing a square root spiral.