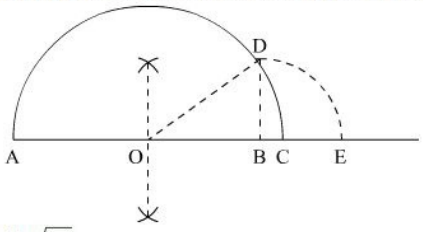
Number System Ex 1.5 Q3

Answer :

We are asked to represent the real numbers $\sqrt{3.5}, \sqrt{9.4}$ and $\sqrt{10.5}$ on the real number line

We will follow a certain algorithm to represent these numbers on real number line



(a) $\sqrt{3.5}$

We will take A as reference point to measure the distance

(1) Draw a sufficiently large line and mark a point A on it

(2) Take a point B on the line such that $AB = 3.5$ cm

(3) Mark a point C on the line such that $BC = 1$ cm

(4) Find mid point of AB and let it be O

(5) Take O as center and OC as radius and draw a semi circle. Draw a perpendicular BD which cuts the semi circle at D

(6) Take B as the center and BD as radius, draw an arc which cuts the horizontal line at E

(7) Point E is the representation of $\sqrt{3.5}$

(b) $\sqrt{9.4}$

We will take A as reference point to measure the distance. We will follow the same figure in the part (a)

(1) Draw a sufficiently large line and mark a point A on it

(2) Take a point B on the line such that $AB = 9.4$ cm

(3) Mark a point C on the line such that $BC = 1$ cm

(4) Find mid point of AB and let it be O

(5) Take O as center and OC as radius and draw a semi circle. Draw a perpendicular BC which cuts the semi circle at D

(6) Take B as the center and BD as radius, draw an arc which cuts the horizontal line at E

(7) Point E is the representation of $\sqrt{9.4}$

(c) $\sqrt{10.5}$

We will take A as reference point to measure the distance. We will follow the same figure in the part (a)

(1) Draw a sufficiently large line and mark a point A on

(2) Take a point B on the line such that $AB = 10.5$ cm

(3) Mark a point C on the line such that $BC = 1$ cm

(4) Find mid point of AB and let it be O

(5) Take O as center and OC as radius and draw a semi circle. Draw a perpendicular BC which cuts the semi circle at D

(6) Take B as the center and BD as radius, draw an arc which cuts the horizontal line at E

(7) Point E is the representation of $\sqrt{10.5}$

Number System Ex 1.5 Q4

Answer :

(i) True, because rational or an irrational number is a family of real number. So every real number is either rational or an irrational number.

(ii) True, because the decimal representation of an irrational is always non-terminating or non-repeating. So $\pi = 3.141...$ is an irrational number.

(iii) False, because we can represent irrational numbers by points on the number line.

********** END **********