

Exercise.1E

Answer.1. $\sqrt{5}$

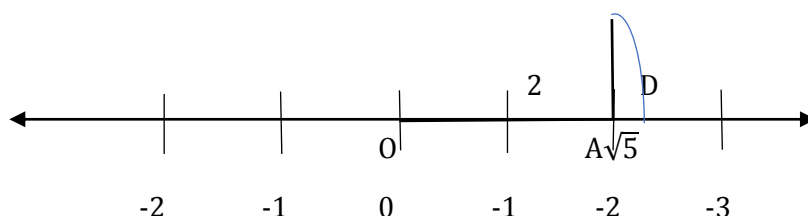
Let M'OM be a horizontal line, taken as the x-axis and let O be the origin. Let O be 0.

Take OA = 2unit and draw $AB \perp OA$ such that AB = 1unit. Join OB.

According to Pythagoras theorem, in $\triangle OAB$

$$OB = \sqrt{OA^2 + AB^2} = \sqrt{2^2 + 1^2} = \sqrt{5}$$

$\sqrt{5}$ B 1



$OD = OA = \sqrt{5}$. Thus D, represents $\sqrt{5}$ on number line.

Answer.2.

Let M'OM be a horizontal line, taken as the x-axis and let O be the origin. Let O be 0.

Take OA = 2unit and draw $AB \perp OA$ such that AB = 1unit. Join OB.

According to Pythagoras theorem,

$$OB = \sqrt{OA^2 + AB^2} = \sqrt{(\sqrt{2})^2 + 1^2} = \sqrt{3}$$

Answer.3. Draw a line of 10 cm MN

Increase it 1 cm more from N to O

Draw a bisector of MO

Now draw a 90° angle from N and name the point E and taking NE as a radius draw an arc

Take the point D where the line cuts

Now $ND = NE$

Answer.4.

Construct a right angles triangle ABC such that $AB = 2\text{cm}$ and $BC = 2\text{cm}$.

Apply Pythagoras theorem $AC = \sqrt{AB^2 + BC^2} = \sqrt{2^2 + 2^2} = \sqrt{4 + 4} = \sqrt{8}$

Taking A as centre and AC as radius, Draw a arc cutting the number line at D.

D represents $AC=AD=\sqrt{8}$.

Point D represents irrational number $\sqrt{8}$ on number line.

Answer.5.

Draw a line named XY with measure 4.7unit.

From Y add 1cm and mark as Z

Take the half of XZ and mark it O

Take the measure of XO as radius and with O as centre draw a semi-circle.

And from Y draw a line perpendicular to XY, touching the semi-circle at D.

Take compass pointer on Y and the pencil point on D and then draw an arc on no. line.

Hence mark on no. line as root 4.7.

Answer.6.

Draw a line AB of 10.5 units

Extend the line BC = 1 units and AC = 11.5 units

Take the midpoint of AC as $O = \frac{11.5}{2} = 5.75$

Draw the semicircle from A to C with O as center.

Draw a line Perpendicular to AC at point C until it bisects and intersects with the semi-circle

forming a new point D, $ND, CD = \sqrt{10.5}$

With point M as center draw an arc equal to length MD on the number AC intersecting at

Point E. Now $OD = OE = \sqrt{10.5}$

Answer.7

.Draw a line named XY with measure 7.28 unit.

From Y add 1cm and mark as Z

Take the half of XZ and mark it O

Take the measure of XO as radius and with O as centre draw a semi-circle.

And from Y draw a line perpendicular to XY, touching the semi-circle at D.

Take compass pointer on Y and the pencil point on D and then draw an arc on no. line.

Hence mark on no. line as root 7.28.

Answer8.

Draw a line AB of $1+9.5 = 10.5$ units

Extend the line BC = 1 units and AC = 11.5 units

Take the midpoint of AC as $O = \frac{11.5}{2} = 5.75$

Draw the semicircle from A to C with O as center.

Draw a line Perpendicular to AC at point C until it bisects and intersects with the semi-circle

forming a new point D, $ND, CD = \sqrt{10.5}$

With point M as center draw an arc equal to length MD on the number AC intersecting at

Point E. Now $OD = OE = \sqrt{10.5} = 1 + \sqrt{9.5}$

Answer9.

Draw a line AB is lie between 3-4 ,and given no. is 3.765 if we divide the no. 3 by 3.1,

3.2,3.3,.....,3.9

Here, 3.7 lies between 3.6 and 3.8

On further division we found that 3.76 lies between 3.71 and 3.79

On further division we get 3.765 lies between 3.761 and 3.769

Hence, we get the point 3.765 on the drawn line.

Answer10.

Draw a line AB is lie between 4 – 5 and given no is $4.\overline{67} = 4.6777$

Here 4.6 lies between 4.1 – 4.9

On further divide we found that 4.67 lies between 4.61 – 4.69

On further divided we found that 4.677 lies between 4.671 – 4.679

On further divided we found that 4.6777 lies between 4.6771 – 4.6779

Hence, we get the point on no. line $4.\overline{67}$.