



MATHS

BOOKS - NAND LAL PUBLICATION

PRACTICAL GEOMETRY

Solution Of Textual Questions

1. How many circles can you draw with a given centre O and a point , say P.



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Try These

1. Draw any line segment \overline{PQ} . Take any point R not on it. Through R draw a perpendicular to \overline{PQ} .



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2. Draw a line l and a point x on it. Through x , draw a line segment \overline{XY} perpendicular to l .

Now draw a perpendicular to \overline{XY} at Y,



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3. Draw a line segment of length 12.8 cm .

Using compasses , divide it into four equal parts . Verify by actual measurements .



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4. With PQ of length 6.1 cm as diameter, draw a circle.



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5. Draw a circle with centre C and radius 3.4 cm. Draw any chord \overline{AB} . Construct the perpendicular bisector of \overline{AB} and examine if it passes through C.



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6. Draw a circle with centre C and radius 3.4 cm. Draw any chord \overline{AB} . Construct the

perpendicular bisector of \overline{AB} and examine if it passes through C.



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7. Draw a circle of radius 4 cm. Draw any two of its chords. Construct the perpendicular bisectors of these chords. Where do they meet?



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8. Draw any angle with vertex O .Take a point A on one of its arms and B on any another such that $OA=OB$.Draw the perpendicular bisectors of \overline{OA} and \overline{OB} .Let them meet at P.Is $PA=PB$?



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9. What would happen if HCl were not secreted in the stomach?



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10. How will you construct a 15° angle ?



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11. How will you construct a 150° angle .



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12. How will you construct a 45° angle .



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Exercise 14 1

1. Draw a circle of radius 3.2 cm.



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2. With the same centre O ,draw two circles of radii 4 cm and 2.5 cm.



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3. Draw a circle and any two of its diameter.If you join the ends of thes diameters,what is the figure obtained?What figure is obtained if the diameters are perpendicular to each others?How do you check your answer?



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4. Fill in the blanks

2500cm= ___ m



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5. Draw any circle and mark points A, B and C such that

B is in the exterior of the circle



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6. Draw any circle and mark points A, B and C such that

C is in the interior of the circle .



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7. Let A,B be the centres of two circles of equal radii , draw them so that each one of them passes through the centres of the other .



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Exercise 14 2

1. Draw a line segment of length 7.3 cm using a ruler.



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2. Construct a line segment of length 5.6 cm using ruler and compasses.



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3. Construct \overline{AB} of length 7.8 cm .From this cut off \overline{AC} of length 4.7 cm.Measure \overline{BC} .



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4. Given \overline{AB} of length 3.9 cm, construct \overline{PQ} such that the length of \overline{PQ} is twice that of \overline{AB} . Verify by measurement.



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5. Given \overline{AB} of length 7.3 cm and \overline{CD} of length of 3.4 cm,, construct \overline{XY} such that the length of \overline{XY} is twice that of \overline{AB} and \overline{CD} . Verify by measurement.



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Exercise 14 3

1. Draw any line segment \overline{PQ} . Without measuring \overline{PQ} , construct a copy of \overline{PQ} .



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2. Given same line segment \overline{AB} , whose length is not known. Construct \overline{PQ} such that the length of \overline{PQ} is twice that of \overline{AB} .



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Exercise 14 4

1. Draw any line segment \overline{AB} . Mark any point M on it. Through M draw a perpendicular to \overline{AB} . (use ruler and compass).



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Exercise 14 5

1. Draw \overline{AB} of length 7.3 cm and find its axis of symmetry.



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2. Draw a line segment of length 9.5 cm and construct its perpendicular bisector.



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3. If M is the mid point of XY , what can you say about the lengths MX and XY ?



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Exercise 14 6

1. Draw $\angle(POQ)$ of measure 75° and find its line of symmetry.



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2. Draw an angle of measure 147° and construct its bisector.



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3. Draw a right angle and construct its bisector.



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4. Draw an angle of measure 153° and divide it into four equal parts.



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5. Construct with ruler and compass angles of following measures:

60°



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6. Construct with ruler and compass angles of following measures:

45°



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7. Construct with ruler and compass angles of following measures:

90°



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8. Construct with ruler and compass angles of following measures:

45°



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9. Construct with ruler and compass angles of following measures:

45°



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10. Construct with ruler and compass angles of following measures:

135° .



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11. Draw an angle of measure 45° and bisect it.



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12. Draw an angle of measure 135° and bisect it.



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13. Draw an angle of 70°



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14. Draw an angle of 40° . Copy its supplementary angle.



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Additional Questions For Practice Very Short Answer Type Questions

1. Line of symmetry of angle is its

- A. Initial ray
- B. its angle bisector
- C. its terminal ray
- D. None

Answer:



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2. Shape of protactor is

A. Semi -circular

B. circular

C. Triangular

D. None

Answer:



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3. \overline{XY} is perpendicular bisector of \overline{PQ} then angle between \overline{XY} and \overline{PQ} is

A. 90°

B. 30°

C. 60°

D. None

Answer:



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4. With the help of compass we can draw the angle of

A. 80°

B. 70°

C. 60°

D. None

Answer:



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5. The bisector of an angle divides it into two

A. acute angles

B. obtuse angles

C. equal angles

D.

Answer:



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6. The number of perpendicular that can be drawn from a point not on the line are

A. 1

B. 2

C. 3

D. None

Answer:



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7. Line AB perpendicular to l is written as

A. $AB \parallel l$

B. $AB \perp l$

C. $AB = l$

D.

Answer:



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8. A perpendicular bisector of line 12.5 cm divides the line into

A. 6 cm

B. 6.5 cm

C. 6.25 cm

D.

Answer:



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Additional Questions For Practice Fill In The Blanks

1. If we bisect the diameter of a circle we got the radius of the circle .



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2. State true or false

With the protractor the maximum angle that can be drawn is 180°



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3. State true or false

Each bisected angle of 90° measures 45°



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4. State true or false

Circles drawn through a given point is one .

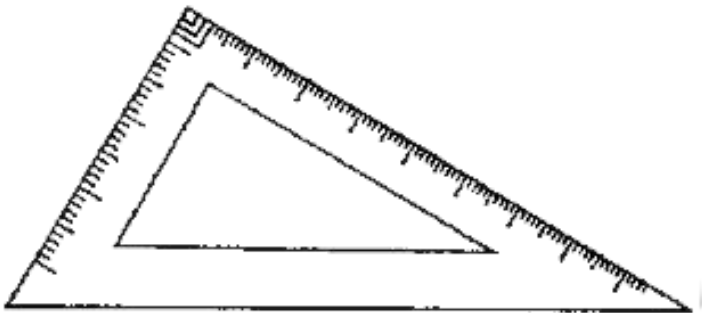


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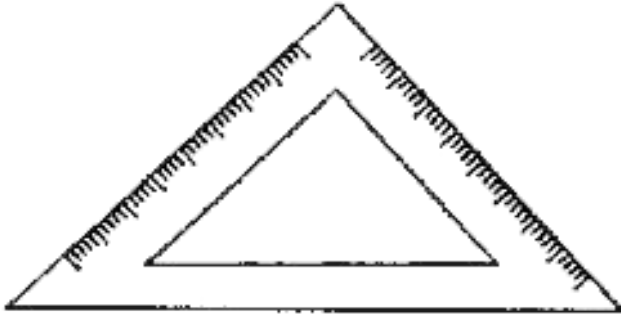
5. You have two set -squares in your mathematical instruments box . Are they symmetric ?

There are two set squares in our mathematical instruments box , they are :

(i) $30^\circ - 60^\circ - 90^\circ$ set square



(ii) $45^\circ - 45^\circ - 90^\circ$ set square



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6. State True or False

Line segment can be compared in terms of their lengths .



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7. State True or False

The number of scales in a protractor for measuring angles is two .



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8. State True or false

If an angle of measure 60° is bisected twice the angle so obtained measures 15° .



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Additional Questions For Practice State Whether True Or False

1. State true or false

A line segment is bisected using ruler and compass .



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2. The line which is perpendicular to the given line segment and divides it into two equal parts is called perpendicular bisector .



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3. Protractor is used to construct angles .



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4. State True or False

There is one line of symmetry in a 30°



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5. State true or false Angle can be copied with help of ruler and compass .



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6. State true or false

The number of bisectors of a line segment are two .



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7. Diameter is the largest chord of the circle.

(True/False)



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8. State true or false

Two circles having same centre but different radii are called concentric circles .

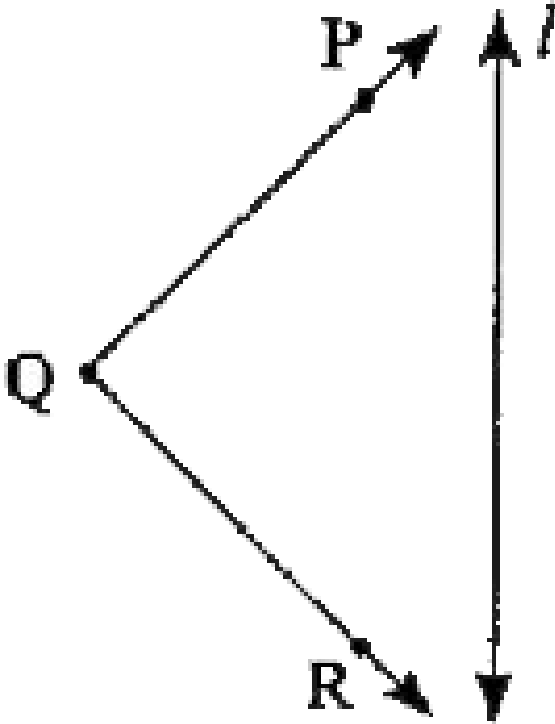


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Additional Questions For Practice Short Answer Type Questions

1. Draw the images P' Q' R' of the points P, Q, R respectively in the line l . Join $P'Q'R$ to form an angle $P'Q'R$.What can you say about the two

angles $\angle PQR$ and $\angle P'Q'R$



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2. Draw a circle of radius 2.6 cm and mark a point p on it . Draw a circle of radius 1.3 cm passing through the point P and touching the circle only at P .



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3. Draw a line segment $AB = 6$ cm .At A and B draw 2 circles of radius 3.5 cm . They intersect each other at points C and D . Join CD to

intersect AB at E. Measure \overline{AE} and \overline{BE} . What do you observe ?



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Additional Questions For Practice Long Answer Type Questions

1. Draw an angle of measure 153° and divide it into four equal parts.



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2. In an isosceles $\triangle ABC$. The bisectors of $\angle B$ and $\angle C$ meet at O if $\angle BOC = 140^\circ$.

What is the measure of $\angle A$?



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3. Construct an angle of measure 90° and divide it into three equal angles.



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4. Construct the following angles using ruler and compass . Write steps of construction

(i) 75° (ii) 150° (iii) 135°



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5. Draw two non - parallel chords of the circle .Where do their perpendicular bisectors intersect .



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Additional Questions For Practice Hots High Order Thinking Skill

1. Draw angle $\text{AOB}=75$ using ruler and compass
.construct an angle $\angle AOB$ equal to $2\frac{1}{2}$ times
 $\angle XO B$



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Sample Paper For Practice

1. To construct an angle of $22\frac{1}{2}^\circ$ we

A. 55°

B. 65°

C. 27.5°

D. none of these

Answer:



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2. A circle can be constructed with the help of

a

A. ruler

B. compass

C. protractor

D. none of these

Answer:



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3. The angle which cannot be constructed using ruler and compass is

A. 15°

B. $22\frac{1}{2}$

C. 40°

D. none of these

Answer:



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4. Ruler and a pair of set square can be used to draw

A. perpendicular lines

B. parallel lines

C. both

D. none of these

Answer:



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5. Two concentric circles have radii 20 cm and 15 cm. Find the area of ring shaped region



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6. State True or False

An angle of 65° cannot be constructed using ruler and compass



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7. Using two set squares angle of 75° can be drawn



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8. $45^\circ - 90^\circ - 45^\circ$ set square does not exist



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9. Two lines are perpendicular if the angle between them is _____.



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10. The perpendicular bisector of a line segment is also its line of _____.



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11. To bisect a line segment of length 6 cm the opening of compass should be more than _____.



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12. If image of points A and B on the line l are p and Q respectively then PQ is equal to _____.





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13. Match the following

- (a) Drawing perpendicular and parallel line – Compass
- (b) Comparing length using pair of pointers – Protractor
- (c) Used to mark of equal lengths but does not measure them, also draw arcs and circles – Set square
- (d) Measuring number of degrees in an angle – divider



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14. Draw an angle of 70° using protractor

.Extend one of its arms to obtain its

supplementary angle . Copy this

supplementary angle using ruler and compass

.



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15. Draw a square of side 5 cm using ruler and compass .



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16. Draw a circle of radius 5 cm and divide it into 6 equal sectors .



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17. Construct an angle of measure 105° using ruler and compass .Also write the steps of construction .



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18. Draw a right angled triangle .Construct three perpendicular bisector on each of its sides .Where do the three bisectors meet .



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