

CBSE TEST PAPER-01
CLASS –IX Mathematics (Construction)

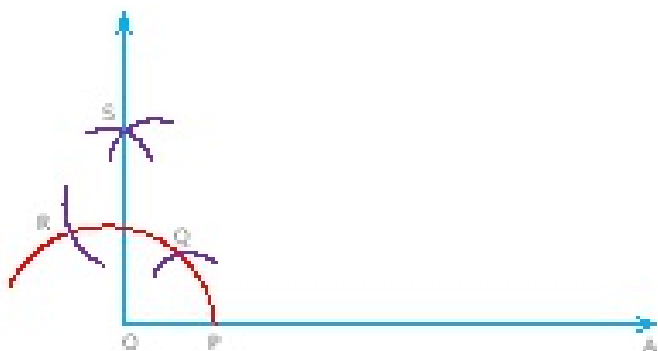
General Instruction:

- All questions are compulsory.
- Question No. 1 to 8 carry three mark each.
- Question number 9 and 10 carry 5 marks each.

1. Construct the angle of the measurement 90°
2. Construct equilateral triangle whose side is 4cm
3. Construct the Perpendicular bisector of line segment of length 12.5cm
4. Construct an angle of $22\frac{1}{2}^\circ$
5. Construct an equilateral triangle of each sides 5.6cm
6. Construct perpendicular bisector of line segment of side 6.5cm
7. Construct an angle of 105°
8. Construct an angle of 45° at initial Point of the given ray and justify the construction
9. Construct a triangle ABC in which $BC = 7\text{cm}$ $\angle B = 75^\circ$ and $AB+AC=9\text{cm}$
10. Construct a triangle XYZ in which $\angle Y = 30^\circ$ $\angle Z = 90^\circ$ and $XY + YZ + ZX = 11\text{cm}$

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[ANSWERS]

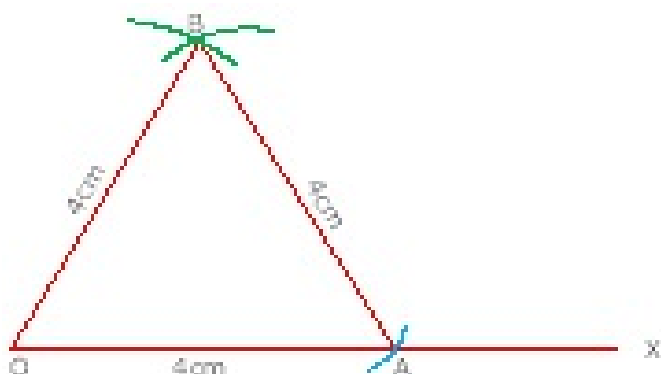
Ans1.



Steps of construction

- (1) Draw any ray OA
- (2) With O as centre and any convenient radius draw an arc intersecting OA at P
- (3) With P as a centre and the same radius as above draw an arc intersecting previous radius at Q
- (4) Again, taking Q as a centre and arc of same radius draw another arc intersecting previous arc at R.
- (5) Again, with R and Q as a centre and radius more than $\frac{1}{2}$ QR draw two arcs intersecting each other at S
- (6) .Then $\angle AOS = 90^\circ$

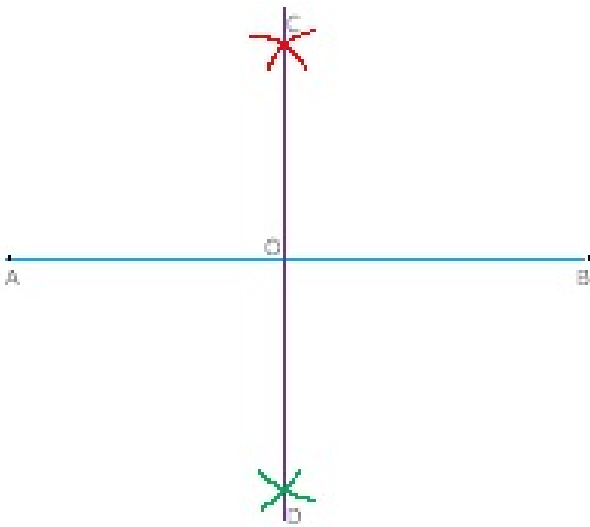
Ans2.



Steps of Construction

- (1) Draw a ray OX
- (2) Taking O as a centre draw an arc of radius 4cm which cut OX at A.
- (3) Now taking O and A as a centre now draw two arcs with radius of 4 cm which intersect each other at B
- (4) Join OB and AB
- (5) $\triangle OBA$ is required triangle

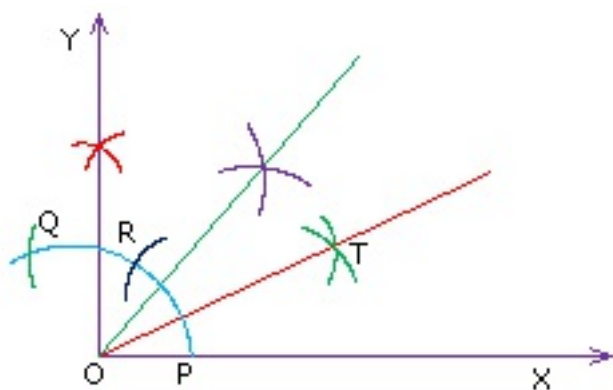
Ans3.



Steps of construction

- (1) Draw a line segment of length 12.5cm
- (2) Taking A as a centre and arc of radius more than $\frac{1}{2}AB$ draw both sides of AB
- (3) Again, taking B as a centre and arc of previous radius draw both sides of AB which intersect previous arcs at C and D
- (4) Join CD. Which intersect AB at O.
- (5) Point O bisects AB.

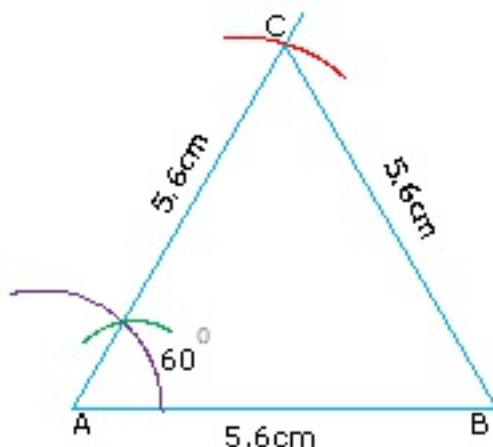
Ans4.



Steps of construction

- (1) Draw ray OX
- (2) Draw $\angle XOY = 90^\circ$
- (3) Bisect $\angle XOY$
- (4) $\angle ROP = 45^\circ$
- (5) Now bisect angle $\angle ROP$
- (6) $\angle TOP$ is required angle $= 22\frac{1}{2} = \frac{45^\circ}{2}$

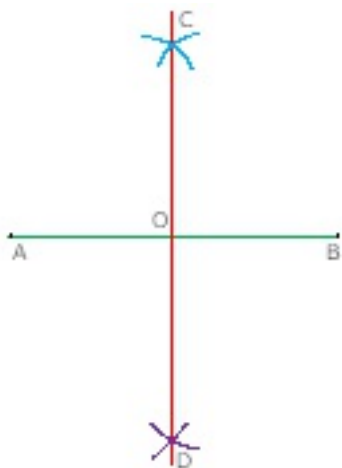
Ans5.



Steps of construction

- (1) Draw $AB = 5.6\text{cm}$
- (2) Draw $\angle BAC = 60^\circ$
- (3) Taking A as centre draw an arc of radius 5.6cm which intersect AX at point C
- (4) Join BC
- (5) $\triangle ABC$ is required equilateral \triangle

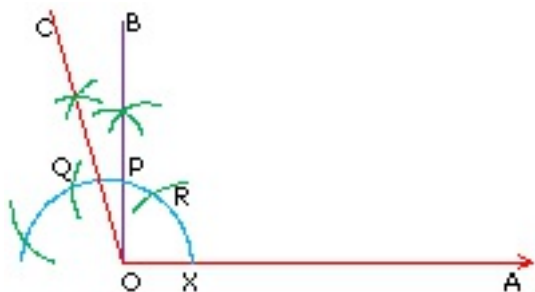
Ans6.



Step of construction

- (1) Draw line segment $AB = 6.5\text{cm}$
- (2) Taking A as a centre and draw two arcs of radius more than $\frac{1}{2}AB$ on both sides of AB.
- (3) Again, taking B as a centre and draw arcs of same radius which intersect previous arcs at point C and D.
- (4) Join CD, CD is perpendicular bisector of AB.

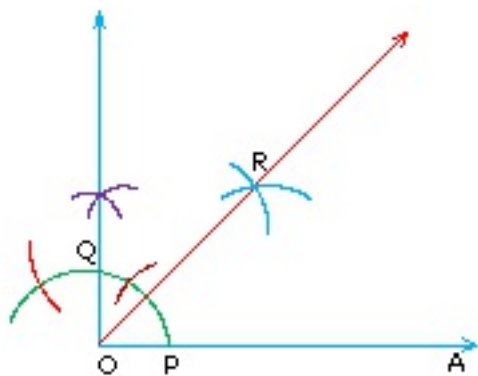
Ans7.



Steps of construction

- (1) Draw ray OA
- (2) Taking X as a centre draw an arc of any radius which intersects OA at point X
- (3) Taking X as a centre draw two arcs of same radius which intersect previous arcs at point R and Q.
- (4) Bisect QR
- (5) $\angle BOA = 90^\circ$
- (6) Now, bisect PQ and Join OC
- (7) $\angle COA = 105^\circ$

Ans8.



Steps of construction

- (1) Draw ray OA of any length
- (2) Draw $\angle QOA = 90^\circ$
- (3) Bisect angle $\angle QOA$
- (4) $\angle ROA$ is required angle and $\angle ROA = 45^\circ$

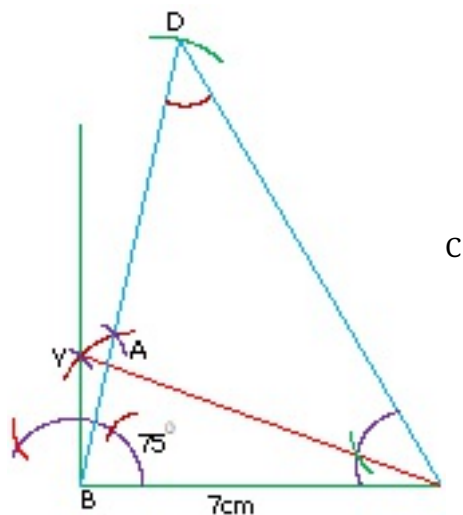
Justification

By construction, $\angle AOQ = 90^\circ$ and OR is bisector of $\angle AOQ$

Therefore,

$$\begin{aligned}\angle AOR &= \frac{1}{2} \angle AOQ \\ &= \frac{1}{2} \times 90^\circ = 45^\circ\end{aligned}$$

Ans9.

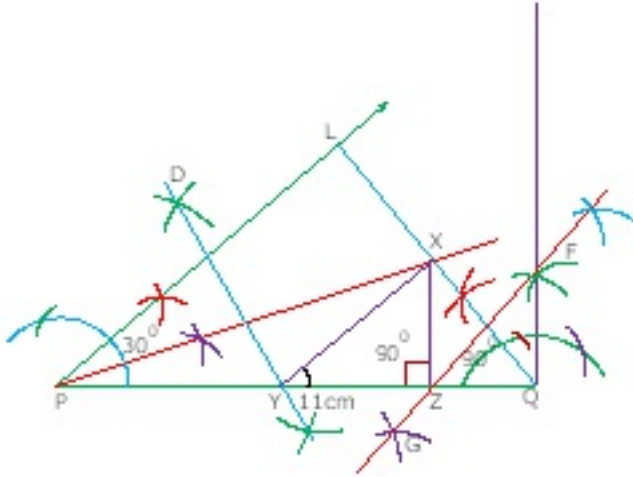


Steps of construction

- (1) Draw $BC = 7\text{cm}$
- (2) Draw $\angle DBC = 75^\circ$
- (3) Cut a line segment $BD = 9\text{cm}$
- (4) Join DC and make $\angle DCY = \angle BDC$

- (5) Let CY intersect BX at A
- (6) Triangle ABC is required triangle

Ans10.



Steps of construction

- (1) Draw line segment $PQ = 11\text{cm}$
- (2) At P construct an angle 30° and at Q an angle 90°
- (3) Bisect these angles. Let the bisectors of these angles intersect each other at point X.
- (4) Draw perpendicular bisector DE of PX and FG of XQ intersect PQ at point Y and Z respectively.
- (5) Join XY and XZ
- (6) XYZ is required triangle.