

- Q1.** Determine a point which divides a line segment of length 12 cm internally in the ratio 2 : 3. Also, justify your construction.
- Q2.** Divide a line segment of length 14 cm internally in the ratio 2 : 5. Also, justify your construction.
- Q3.** Take a point O on the plane of the paper. With O as centre draw a circle of radius 3 cm. Take a point P on this circle and draw a tangent at P .
- Q4.** Draw a circle of radius 4 cm with centre O . Draw a diameter POQ . Through P or Q draw tangent to the circle.
- Q5.** Draw a circle of radius 4 cm. Take a point P on it. Without using the centre of the circle, draw a tangent to the circle at point P .
- Q6.** Draw a circle of radius 3 cm. Take a point at a distance of 5.5 cm from the centre of the circle. From point P , draw two tangents to the circle.
- Q7.** Construct a ΔABC in which $AB = 4$ cm, $BC = 5$ cm and $AC = 6$ cm. Now, construct a triangle similar to ΔABC such that each of its sides is two-third of the corresponding sides of ΔABC . Also, prove your assertion.
- Q8.** Draw a triangle ABC with side $BC = 7$ cm, $\angle B = 45^\circ$, $\angle A = 105^\circ$. Then construct a triangle whose sides are $(4/3)$ times the corresponding sides of ΔABC .
- Q9.** Construct a triangle similar to a given ΔABC such that each of its sides is $(5/7)^{\text{th}}$ of the corresponding sides of ΔABC . It is given that $AB = 5$ cm, $BC = 7$ cm and $\angle ABC = 50^\circ$.
- Q10.** Construct a triangle similar to a given ΔABC such that each of its sides is $(2/3)^{\text{rd}}$ of the corresponding sides of ΔABC . It is given that $BC = 6$ cm, $\angle B = 50^\circ$ and $\angle C = 60^\circ$.
- Q11.** Draw a ΔABC in which $BC = 6$ cm, $AB = 4$ cm and $AC = 5$ cm. Draw a triangle similar to ΔABC with its sides equal to $(3/4)^{\text{th}}$ of the corresponding sides of ΔABC .
- Q12.** Construct a triangle with sides 5 cm, 6cm and 7 cm and then another triangle whose sides are 7.5 of the corresponding sides of the first triangle.
- Q13.** Draw a right triangle ABC in which $AC = AB = 4.5$ cm and $\angle A = 90^\circ$. Draw a triangle similar to ΔABC with its sides equal to $(5/4)^{\text{th}}$ of the corresponding sides of ΔABC .
- Q14.** Construct a triangle similar to ΔABC in which $AB = 4.6$ cm, $BC = 5.1$ cm, $\angle A = 60^\circ$ with scale factor 4 : 5.
- Q15.** Construct a tangent to a circle of radius 4 cm from a point on the concentric circle of radius 6 cm and measure its length. Also, verify the measurement by actual calculation.
- Q16.** Draw a circle of radius 4 cm. Take a point P outside the circle. Without using the centre of the circle, draw two tangents to the circle from point P .
- Q17.** Draw a circle of radius 6 cm. a tangent to this circle making an angle of 30° with a line passing through the centre.
- Q18.** Construct a triangle of sides 4 cm, 5 cm and 6 cm and then a triangle similar to it whose sides are $(2/3)^{\text{rd}}$ of the corresponding sides of it.
- Q19.** Draw a right triangle in which the sides (other than hypotenuse) are of length 5 cm and 4 cm. Then construct another triangle whose sides are $5/3$ times the corresponding sides of the given triangle.

- Q20.** Construct an isosceles triangle whose base is 8 cm and altitude 4 cm and then another triangle whose sides are $\frac{3}{2}$ times the corresponding sides of the isosceles triangle.
- Q21.** Draw a $\triangle ABC$ with side $BC = 6$ cm, $AB = 5$ cm and $\angle ABC = 60^\circ$. Then construct a triangle whose sides are $(\frac{3}{4})^{\text{th}}$ of the corresponding sides of the $\triangle ABC$.
- Q22.** Draw a right triangle in which sides (other than the hypotenuse) are of lengths 8 cm and 6 cm. Then construct another triangle whose sides are $\frac{3}{4}$ times the corresponding sides of the first triangle.
- Q23.** Construct a triangle with sides 5 cm, 5.5 cm and 6.5. Now construct another triangle, whose sides are $\frac{3}{5}$ times the corresponding sides of the given triangle.
- Q24.** Construct a triangle PQR with side $QR = 7$ cm, $PQ = 6$ cm and $\angle PQR = 60^\circ$. Then construct another triangle whose sides are $\frac{3}{5}$ of the corresponding sides of $\triangle PQR$.
- Q25.** Draw a pair of tangents to a circle of radius 5 cm which are inclined to each other at an angle of 60° .
- Q26.** Draw a line segment AB of length 8 cm. Taking A as centre, draw a circle of radius 4 cm and taking B as centre, draw another circle of radius 3 cm. Construct tangents to each circle from the centre of the other circle.
- Q27.** Draw a pair of tangents to a circle of radius 4.5 cm, which are inclined to each other at an angle of 45° .
- Q28.** Draw two tangents to a circle of radius 3.5 cm from a point P at a distance of 6.2 cm from its centre.
- Q29.** Let ABC be a right triangle in which $AB = 3$ cm, $BC = 4$ cm and $\angle B = 90^\circ$. BD is the perpendicular from B on AC . The circle through B, C, D is drawn. Construct the tangents from A to this circle.
- Q30.** Draw a right triangle ABC in which $AB = 6$ cm, $BC = 8$ cm and $\angle B = 90^\circ$. Draw BD perpendicular from B on AC and draw a circle passing through the point B, C and D . Construct tangents from A to this circle.

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S1. Draw.

S2. Draw.

S3. Draw.

S4. Draw.

S5. Draw.

S6. Draw.

S7. Draw.

S8. Draw.

S9. Draw.

S10. Draw.

S11. Draw.

S12. Draw.

S13. Draw.

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S15. Draw.

S16. Draw.

S17. Draw.

S18. Draw.

S19. Draw.

S20. Draw.

S21. Draw.

S22. Draw.

S23. Draw.

S24. Draw.

S25. Draw.

S26. Draw.

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S27. Draw.

S28. Draw.

S29. Draw.

S30. Draw.

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