

- To divide a line segment AB in the ratio 3 : 7, first a ray AX is drawn so that angle BAX is an acute angle and then at equal distances point are marked on the ray AX such that the minimum number of these point is
 (a) 3 (b) 10 (c) 7 (d) 12
- To divide a line segment AB in the ratio 4 : 5, first a ray AX is drawn first such that angle BAX is an acute angle and then points A1, A2, A3, are located at equal distances on the ray AX and the point B is joined to
 (a) A4 (b) A5 (c) A10 (d) A9
- To divide a line segment AB in the ratio 4 : 5, first a ray AX is drawn first such that angle BAX is an acute angle, then draw a ray BY parallel to AX and the points A1, A2, A3, And B1, B2, B3, ... are located at equal distances on the ray AX and BY respectively, then the points joined are
 (a) A5 and B6 (b) A6 and B5 (c) A4 and B5 (d) A5 and B4
- To construct a triangle similar to a given ΔABC with its sides $\frac{2}{5}$ of the corresponding sides of ΔABC , first draw a ray BX such that angle CBX is an acute angle and X lies on the opposite side of A with respect to BC. Then, locate point A1, A2, A3,.... On BX at equal distance and next steps is to join
 (a) A7 to C (b) A2 to C (c) A5 to C (d) A4 to C
- To construct a triangle similar to a given ΔABC with its sides $\frac{2}{5}$ of the corresponding sides of ΔABC , first draw a ray BX such that angle CBX is an acute angle and X lies on the opposite side of A with respect to BC. The minimum number of points to be located at equal distances on ray BX is
 (a) 3 (b) 5 (c) 8 (d) 2
- To construct a triangle similar to a given ΔABC with its sides $\frac{4}{3}$ of the corresponding sides of ΔABC , first draw a ray BX such that angle CBX is an acute angle and X lies on the opposite side of A with respect to BC. The minimum number of points to be located at equal distances on ray BX is
 (a) 3 (b) 4 (c) 7 (d) none of these
- To draw a pair of tangents to a circle which are inclined to each other at an angle of 30° , it is required to draw tangents at end points of those two radii of the circle, the angle between them, should be
 (a) 150° (b) 90° (c) 60° (d) 120°
- To draw a pair of tangents to a circle which are inclined to each other at an angle of 60° , it is required to draw tangents at end points of those two radii of the circle, the angle between them, should be
 (a) 150° (b) 90° (c) 60° (d) 120°
- In a pair of set, squares, one if with angles are
 (a) $30^\circ, 60^\circ, 90^\circ$ (b) $30^\circ, 30^\circ, 45^\circ$ (c) $75^\circ, 25^\circ, 80^\circ$ (d) $65^\circ, 15^\circ, 100^\circ$
- In a pair of set, squares, the other is with angles

(a) $45^{\circ}, 45^{\circ}, 90^{\circ}$ (b) $30^{\circ}, 50^{\circ}, 100^{\circ}$ (c) $60^{\circ}, 60^{\circ}, 60^{\circ}$ (d) none of these

11. To draw the perpendicular bisector of line segment AB, we open the compass

(a) more than $\frac{1}{2}AB$ (b) less than $\frac{1}{2}AB$ (c) equal to $\frac{1}{2}AB$ (d) none of these

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

(a) bisect an angle of 60° (b) bisect an angle of 30°
(c) bisect an angle of 45° (d) none of these

13. To construct a triangle we must know at least its _____ parts.

(a) two (b) three (c) one (d) five

14. For which of the following condition the construction of a triangle is not possible:

(a) If two sides and angle included between them is not given
(b) If two sides and angle included between them is not given
(c) If its three sides are given
(d) If two angles and side included between them is given

15. Construction of a triangle is not possible if:

(a) $AB + BC < AC$ (b) $AB + BC = AC$ (c) both (a) and (b) (d) $AB + BC > AC$

16. With the help of ruler and compass it is not possible to construct an angle of

(a) 37.5° (b) 40.5° (c) 22.5° (d) 67.5°

17. The construction of a triangle ABC given that $BC = 3$ cm, $\angle C = 60^{\circ}$ is possible when difference of AB and AC is equal to

(a) 3.2 cm (b) 3.1 cm (c) 3 cm (d) 2.8 cm

18. The construction of a triangle ABC, given that $BC = 6$ cm, $\angle C = 45^{\circ}$ is not possible when the difference of AB and AC is equal to

(a) 6.9 cm (b) 5.2 cm (c) 5.0 cm (d) 4.0 cm.

19. Construction of a triangle is not possible if:

(a) $AB - BC < AC$ (b) $AB - BC = AC$ (c) both (a) and (b) (d) $AB - BC > AC$

20. To construct an angle of 15° , we

(a) bisect an angle of 60° (b) bisect an angle of 30°
(c) bisect an angle of 45° (d) none of these

1. Draw two tangents to a circle of radius 3.5 cm from a point P at a distance of 5.5 cm from its centre.
2. Construct a similar ΔABC such that each of its side is $\frac{2}{3}$ of the corresponding sides of ΔABC . It is given that $AB = 5$ cm, $AC = 6$ cm and $BC = 7$ cm.
3. Draw a line segment AB of length 4.4 cm. Taking A as centre, draw a circle of radius 2 cm and taking B as centre, draw another circle of radius 2.2 cm. Construct tangents to each circle from the centre of the other circle.
4. Draw a pair of tangents to a circle of radius 2 cm that are inclined to each other at an angle of 90° .
5. Draw a pair of tangents to a circle of radius 3 cm that are inclined to each other at an angle of 50° .
6. Construct a tangent to a circle of radius 2 cm from a point on the concentric circle of radius 2.6 cm and measure its length. Also, verify the measurements by actual calculations.
7. Construct an isosceles triangle whose base is 7 cm and altitude 4 cm and then construct another similar triangle whose sides are $\frac{3}{2}$ time the corresponding sides of the isosceles triangle.
8. Construct an isosceles triangle whose base is 8 cm and altitude 4 cm and then another triangle whose sides are $1\frac{1}{2}$ times the corresponding sides of the isosceles triangle.
9. Draw a triangle ABC with side $BC = 6$ cm, $AB = 5$ cm and $\angle ABC = 60^\circ$. Then construct a triangle whose sides are $\frac{3}{4}$ of the corresponding sides of the triangle ABC.
10. Draw a triangle ABC with side $BC = 7$ cm, $\angle B = 45^\circ$, $\angle A = 105^\circ$. Then, construct a triangle whose sides are $\frac{4}{3}$ times the corresponding sides of ΔABC .
11. Draw a right triangle in which the sides (other than hypotenuse) are of lengths 4 cm and 3 cm. Then construct another triangle whose sides are $\frac{5}{3}$ times the corresponding sides of the given triangle.
12. Draw a circle with the help of a bangle. Take a point outside the circle. Construct the pair of tangents from this point to the circle.
13. Draw a circle of radius 6 cm. From a point 10 cm away from its centre, construct the pair of tangents to the circle and measure their lengths.

14. 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.
15. Draw a circle of radius 3 cm. Take two points P and Q on one of its extended diameter each at a distance of 7 cm from its centre. Draw tangents to the circle from these two points P and Q.
16. Draw a pair of tangents to a circle of radius 5 cm which are inclined to each other at an angle of 60° .
17. 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.
18. Draw a circle of radius 5cm. Take a point P on it. Without using the centre of the circle, construct a tangent at the point P. Write the steps of construction also.
19. Draw a circle of diameter 12cm. From a point P, 10cm away from its centre, construct a pair of tangent to the circle. Measure the lengths of the tangent segments.
20. Draw a circle of radius 5cm. from a point P, 7cm away from its centre, construct a pair of tangents to the circle. Measure the length of the tangent segments.
21. Draw a circle of radius 7cm. From a point P, 8cm away from its centre, Construct a pair tangents to the circle. Measure the length of the tangent segments.
22. Draw a right angled triangle ABC with $AB = 4.5\text{cm}$, $AC = 7.5\text{cm}$ and $\angle B = 90^\circ$. Construct its incircle. Write the steps of construction.
23. Construct a triangle ABC in which $BC = 13\text{cm}$, $CA = 5\text{cm}$ and $AB = 12\text{cm}$. Draw its incircle and measure its radius.
24. Construct a triangle ABC in which $AB = 3\text{cm}$, $BC = 4\text{cm}$ and $AC = 5\text{cm}$. Draw the circumcircle of triangle ABC.
25. Construct the circumcircle of an equilateral triangle with side 6cm. Write the steps of construction.