

Mathematics Assignment (Class-X)

Chapter-11 Constructions

	1 MARKER QUESTIONS
1	To draw tangents at point Q to the circumference of an isosceles right triangle PQR, right angled at Q, we need to draw _____ through Q. (a) A line parallel to PR (b) a line perpendicular to PQ (c) A line perpendicular to QR (d) a line inclined at 60° to PQ
2	To draw tangents to a circle of radius 'p' from a point on the concentric circle of radius 'q', the first step is to find _____. (a) mid-point of q (b) mid-point of p (c) mid-point of $p - r$ (d) mid-point of $p + q$
	2 MARKER QUESTIONS
3	Draw a line segment AB of length 6 cm. take a point P on it such that $AP : PB = 3 : 2$.
4	Draw a line segment of length 7.8 cm and divide it in the ratio 5 : 8. Measure the two parts.
5	Draw a line segment PQ of length 8.5 cm. Divide it in the ratio 2 : 5.
6	Draw a line segment PQ of length 10 cm. Find a point R on it such that $PR/PQ = 3/10$.
	4 MARKER QUESTIONS
7	Draw a circle of diameter 8 cm. From a point P, 7 cm away from its centre, construct a pair of tangents to the circle. Justify your construction.
8	Draw a circle of diameter 7 cm. Take two points A and B on its extended diameter each at a distance of 6 cm from its centre. Draw tangents to the circle from the points A and B. Justify your construction.
9	Draw a triangle with side $BC = 5$ cm, $\angle B = 45^\circ$ and $\angle A = 75^\circ$. Then, construct a similar triangle whose sides are $5/3$ times the sides of the corresponding sides of the triangle drawn first.
10	Draw a circle of diameter 6 cm with centre O. Draw a diameter AOB. Through A or B draw tangent to the circle.
11	Construct a triangle ABC in which $AB = 5$ cm, $\angle B = 60^\circ$ and altitude $CD = 3$ cm. construct a triangle AQR similar to triangle ABC such that each side of triangle AQR is 1.5 times that of the corresponding sides of triangle ABC.
12	Draw a right triangle with the sides making the right angle of measures 6 cm and 8 cm. Construct a triangle similar to it with sides 0.75 times that of the sides of the given triangle.
13	Construct a triangle with sides 5 cm, 6.5 cm and 7.6 cm and then construct another triangle similar to it whose sides are $7/5$ of the corresponding sides of the given triangle.
14	Construct a triangle similar to a given triangle with sides 6 cm, 7 cm and 8 cm and whose sides are 1.4 times the corresponding sides of the given triangle. Justify your construction.

15	Draw a right triangle with the sides making the right angle of measures 3 cm and 5 cm. Construct a triangle similar to it with sides 2.5 times that of the sides of the given triangle.
16	Construct an isosceles triangle whose base is 8 cm and altitude is 5.5 cm. and then construct another triangle whose sides are $\frac{4}{3}$ times the corresponding sides of the isosceles triangle.
17	Construct an isosceles triangle whose base is 6 cm and altitude is 4.5 cm. and then construct another triangle whose sides are $\frac{3}{4}$ times the corresponding sides of the isosceles triangle.
18	Draw a pair of tangents to a circle that is inclined to at an angle of 65° .
19	Draw a pair of tangents to a circle that is inclined to at an angle of 75° .
20	Construct a triangle ABC given that $AB = 6$ cm, $BC = 5$ cm and $\angle B = 30^\circ$. Construct a triangle similar to it such that the sides are in the ratio 3 : 4 of the sides of the first triangle.
21	Draw a pair of tangents to a circle of radius 2.5 cm which are inclined to each other at an angle of 40° .
22	Construct two circles of radii 3 cm and 5 cm, such that their centres are 12 cm apart. Join their centres and construct the perpendicular bisector of the line segment thus obtained. Take a point M 3.5 cm away from the mid-point of the line segment joining the two centres and lying on the perpendicular bisector. From M, construct tangents to the bigger circle.
	HOTS
23	Let ABC be a right triangle in which $AB = 4$ cm, $BC = 3$ cm and $\angle B = 90^\circ$. QM is the perpendicular from Q on PR. The circle through Q, R and M is drawn. Construct the pair of tangents from P to this circle.
24	Construct an equilateral triangle with altitude 5 cm. Construct a triangle similar to it with the sides $\frac{4}{5}$ of the sides of the given triangle.
25	Construct a triangle ABC similar to given equilateral triangle PQR with side 5 cm such that each of its side is $\frac{6}{7}$ th of the corresponding side of triangle PQR. Also draw the circumcircle of triangle ABC.
26	Let PQR be a right triangle in which $PQ = 5$ cm, $QR = 6$ cm and $\angle Q = 90^\circ$. BD is the perpendicular from B on AC. The circle through B, C and D is drawn. Construct the pair of tangents from A to this circle.
27	Construct an equilateral triangle with altitude 4 cm. Construct a triangle similar to it with the sides $\frac{5}{4}$ of the sides of the given triangle.