



**Combined
Paper**

**Std. X - Geometry
Chapter 1 and 3**

**Marks : 20
Duration : 1 Hr.**

Instruction :

Solve all questions. Draw diagrams whenever necessary

Diagram is essential for writing the proof

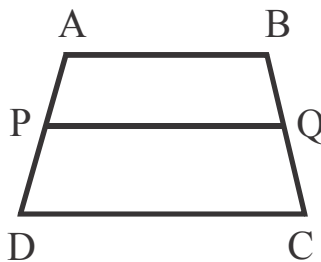
Do not change the order of the questions

Marks of constructions should be distinct

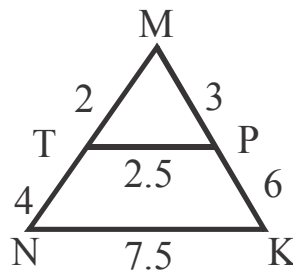
Q.1 Solve any four questions.

[4 M]

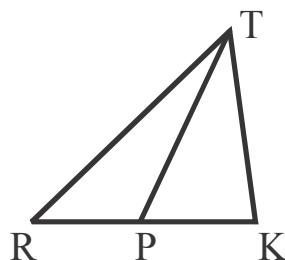
- (1) In the following figure, parallelogram ABCD is a trapezium. side $AB \parallel \text{seg } PQ \parallel \text{side } DC$ and $AP = 15$, $PD = 12$, $QC = 14$ then find BQ.



- (2) Draw a circle of radius 3.5 cm. Take any point K on it. Draw a tangent to the circle at K without using centre of the circle.
- (3) From the figure given whether the triangles are similar or not. Give reason.



- (4) Draw an angle of 110° and bisect it.
- (5) In the following figure $RP : PK = 3:2$, then find the value of $A(\triangle TRP) : A(\triangle TRK)$



Q.2 Solve any three sub-questions.

[6 M]

- (1) Find the perimeter of an isosceles right triangle with each of its congruent sides is 7 cms.
- (2) Construct the circumcircle of ΔKLM in which $LM = 7$ cms, $\angle K = 60^\circ$, $\angle M = 55^\circ$
- (3) D is a point on side BC of ΔABC such that $\angle ADC = \angle BAC$

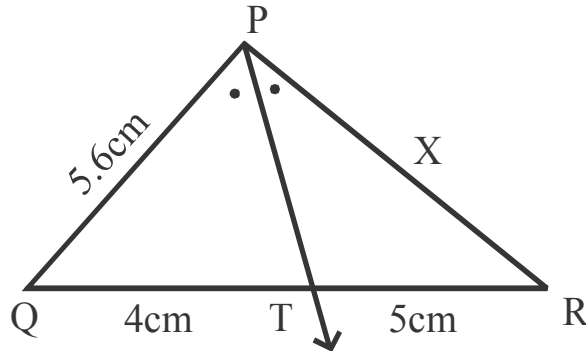
Show that $AC^2 = BC \times DC$

- (4) Sides of a triangle are 9, 40 and 41. Determine whether the triangle is a right angled triangle or not.

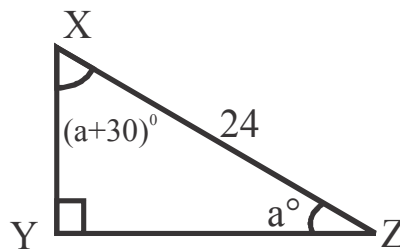
Q.3 Solve any two sub-questions.

[6 M]

- (1) In the following figure, Ray PT is the bisector of $\angle QPR$. Find the value of 'x' and the perimeter of ΔPQR .



- (2) Draw a tangent to the circle from the point L with radius 2.8 cms. Point 'L' is at a distance 5 cms from the centre 'M'.
- (3) In ΔXYZ , $\angle Y = 90^\circ$, $\angle Z = a^\circ$ and $\angle X = (a + 30)^\circ$. If $XZ = 24$, find XY and YZ.



Q.4 Solve any one sub-questions.

[4 M]

- (1) $\Delta RHP \sim \Delta NED$. In ΔNED , $NE = 7$ cms, $\angle D = 30^\circ$, $\angle N = 20^\circ$ and $\frac{HP}{ED} = \frac{4}{5}$, Construct ΔRHP and ΔNED .
- (2) ABC is a triangle where $\angle C = 90^\circ$. Let $BC = a$, $CA = b$, $AB = c$ and 'p' be the length of the perpendicular from C on AB. Prove that (i) $cp = ab$ (ii) $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$.