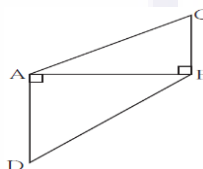


Q.1. A) Solve Multiple Choice questions (1 mark each) 4 M

- Find perimeter of a square if its diagonal is $10\sqrt{2}$ cm.
 (A) 10 cm (B) $40\sqrt{2}$ cm (C) 20 cm (D) 40 cm
- Out of the following which is the Pythagorean triplet?
 (A) (1, 5, 10) (B) (3, 4, 5) (C) (2, 2, 2) (D) (5, 5, 2)
- The number of tangents that can be drawn to a circle at a point on the circle is
 (A) 3 (B) 2 (C) 1 (D) 0
- If $\Delta ABC \sim \Delta PQR$ and $\frac{AB}{PQ} = \frac{7}{5}$, then
 (A) ΔABC is bigger. (B) ΔPQR is bigger.
 (C) Both triangles will be equal. (D) Can not be decided

Q.1. B) Solve the following (1 mark each) 4 M

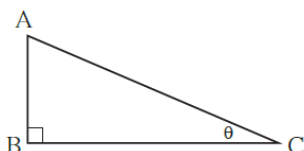
- Write section formula and midpoint formula.
- In figure $BC \perp AB$, $AD \perp AB$,
 $BC = 4$, $AD = 8$, then find
 $A(\Delta ABC) : A(\Delta ADB)$



- Find $\sin \theta \times \operatorname{cosec} \theta = ?$
- Two circles having radii 3.5 cm and 4.8 cm touch each other internally.
 Find the distance between their centres.

Q.2. A) Complete 2 activities out of 3 (2 marks each) 4 M

- Fill in the blanks with reference to figure

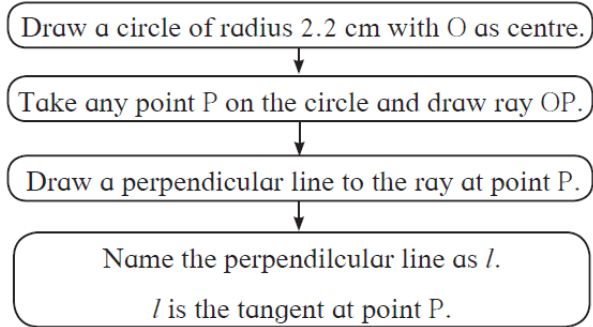


$$\sin \theta = \frac{\square}{\square}, \cos \theta = \frac{\square}{\square},$$

$$\tan \theta = \frac{\square}{\square}$$

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2. Complete the following activity to draw a tangent to a circle at a point on the circle.



3. For finding AB and BC with the help of information given in figure complete following activity.

AB = BC

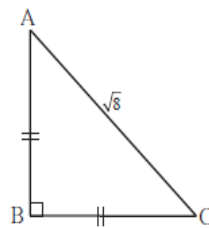
$\therefore \angle BAC =$

$\therefore AB = BC =$ $\times AC$

$=$ $\times \sqrt{8}$

$=$ $\times 2\sqrt{2}$

$=$



Q.2. B) Solve Any 4 out of 5

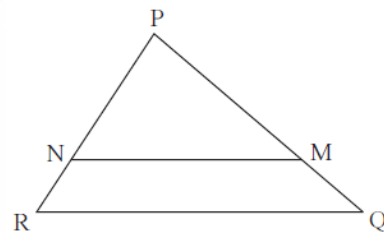
(2 marks each)

8 M

1. Prove: $\sec^2\theta + \operatorname{cosec}^2\theta = \sec^2\theta \times \operatorname{cosec}^2\theta$

2. In ΔPQR , $PM = 15$, $PQ = 25$

$PR = 20$, $NR = 8$. State whether line NM is parallel to side RQ . Give reason.



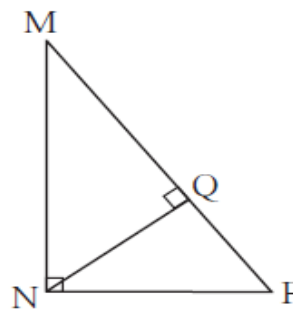
3. $\square MRPN$ is cyclic, $\angle R = (5x - 13)^\circ$, $\angle N = (4x + 4)^\circ$. Find measures of $\angle R$ and $\angle N$.

4. In figure, $\angle MNP = 90^\circ$,

seg $NQ \perp$ seg MP ,

$MQ = 9$,

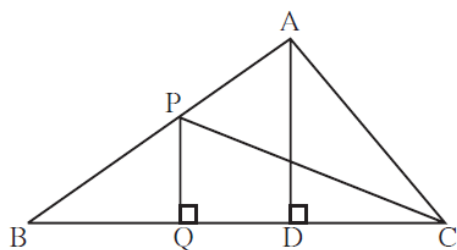
$QP = 4$, find NQ .



5. Find the distance between points $A(2, 3)$, $B(4, 1)$.

Q.3. A) Complete 1 activity out of 2**(3 marks each)****3 M**

1.

In adjoining figure $PQ \perp BC$, $AD \perp BC$ then find following ratios.

$$(i) \frac{A(\Delta PQB)}{A(\Delta PBC)} = \frac{\square}{\square} \quad (ii) \frac{A(\Delta PBC)}{A(\Delta ABC)} = \frac{\square}{\square}$$

$$(iii) \frac{A(\Delta ABC)}{A(\Delta ADC)} = \frac{\square}{\square} \quad (iv) \frac{A(\Delta ADC)}{A(\Delta PQC)} = \frac{\square}{\square}$$

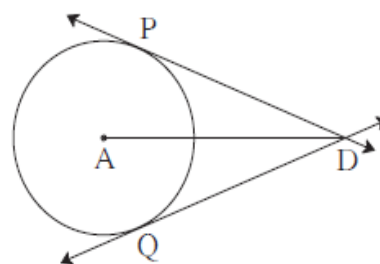
2. Complete the following activity.

Tangent segment theorem

Theorem : Tangent segments drawn from an external point to a circle are congruent.

Observe the adjoining figure. Write 'given' and 'to prove.'

Draw radius AP and radius AQ and complete the following proof of the theorem.

Proof : In ΔPAD and ΔQAD ,seg PA \cong _____ radii of the same circle.seg AD \cong seg AD _____ $\angle APD = \angle AQD = 90^\circ$ tangent theorem $\therefore \Delta PAD \cong \Delta QAD$ _____ \therefore seg DP \cong seg DQ _____**Q.3. B) Solve Any 2 out of 4****(3 marks each)****6 M**

1. State and Explain Basic Proportionality Theorem.

2. Show that points (1, 7), (4, 2), (-1, -1) and (-4, 4) are vertices of a square.

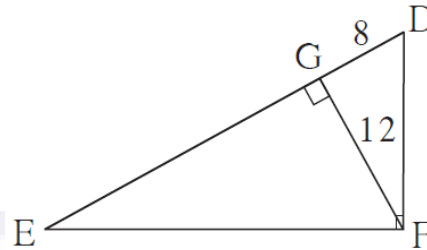
3. Draw a circle of radius 3.4 cm and centre E. Take a point F on the circle.

Take another point A such that E-F-A and FA = 4.1 cm. Draw tangents to the circle from point A.

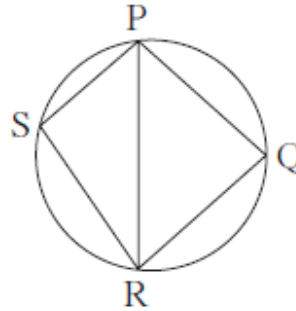
4. If $\tan \theta = \frac{3}{4}$, find the values of $\sec \theta$ and $\cos \theta$.

Q.4) Solve Any 2 out of 3**(4 marks each)****8 M**

1. In figure, $\angle DFE = 90^\circ$,
 $FG \perp ED$, If $GD = 8$, $FG = 12$,
 find
 (i) EG
 (ii) FD and (iii) EF



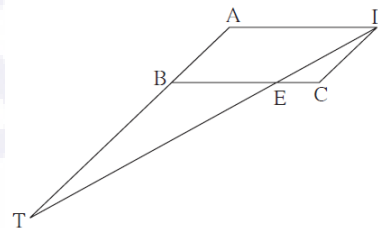
2. In figure, $\square PQRS$ is cyclic.
 side $PQ \cong$ side RQ . $\angle PSR = 110^\circ$,
 Find -
 (i) measure of $\angle PQR$
 (ii) $m(\text{arc } PQR)$
 (iii) $m(\text{arc } QR)$
 (iv) measure of $\angle PRQ$



3. $\Delta ABC \sim \Delta LBN$. In ΔABC , $AB = 5.1$ cm, $\angle B = 40^\circ$, $BC = 4.8$ cm.
 Construct ΔABC and ΔLBN such that $\frac{AC}{LN} = \frac{4}{7}$.

Q.5) Solve Any 1 out of 2**(3 marks each)****3 M**

1. $\square ABCD$ is a parallelogram point E is on side BC. Line DE intersects ray AB in point T. Prove that
 $DE \times BE = CE \times TE$.



2. Find the co-ordinates of the points of trisection of the line segment AB with $A(2, 7)$ and $B(-4, -8)$.

Chapter wise weightage *		
Chp No	Chapter Name	Total Marks
1	Similarity	13
2	Pythagoras Theorem	9
3	Circle	11
4	Geometric Construction	10
5	Co ordinate Geometry	9
6	Trigonometry	8
7	Mensuration	-
		60

* As per reduced syllabus 2020 – 2021

*Note: Ch 7 is completely omitted