



VIVEK TUTORIALS

X (English)

(Special Test)

Mathematics Part - II-(3)

DATE: 21-02-19

TIME: 1 Hr

MARKS: 40

SEAT NO:

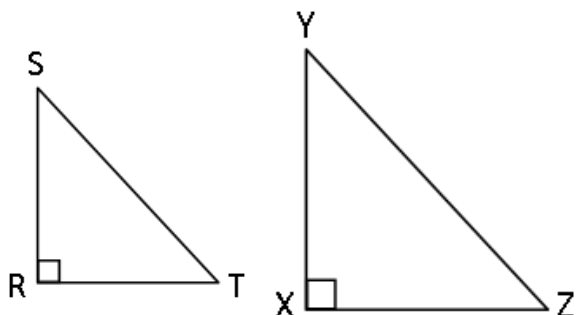
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Q.1 Solve the following (IX)

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- 1 Assume that, $\Delta RST \sim \Delta XYZ$. Complete the following statements.

$$\frac{RT}{XZ} = \frac{\dots}{YZ}, \frac{RS}{XY} = \frac{ST}{\dots}, \frac{XY}{\dots} = \frac{YZ}{ST}$$



- 2 If P is the centre of the circle with radius 6.7 cm, $d(P, Q) = 7.6$ cm, $d(P, R) = 5.7$ cm, find the positions of the points R and Q.

Q.2 Attempt the following (IX)

4

- 1 Radius of circle is 34 cm. And distance of chord from center is 24 cm. Find distance of chord from its center
- 2 In right angled triangle XYZ if $\angle Z = \theta$, $\angle y = 90^\circ$, $\cos \theta = \frac{24}{25}$. Find $\sin \theta$ and $\tan \theta$.

Q.3 Multiple Choice Questions

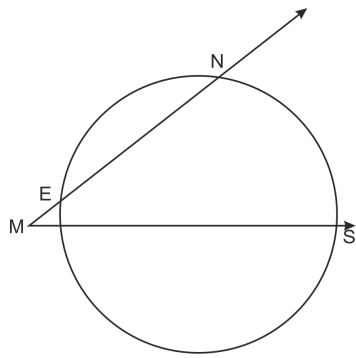
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- 1 Points A, B, C are on a circle, such that $m(\text{arc AB}) = m(\text{arc BC}) = 120^\circ$. No point, except point B, is common to the arcs. Which is the type of $\angle ABC$?
- Equilateral triangle
 - Scalene triangle
 - Right angled triangle
 - Isosceles triangle
- 2 Two circles of radii 5.5 cm and 3.3 cm respectively touch each other. What is the distance between their centers ?
- 4.4 cm
 - 8.8 cm
 - 2.2 cm
 - 8.8 or 2.2 cm

Q.4 Solve the following

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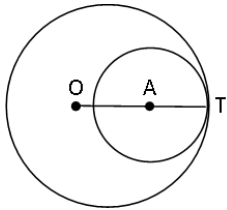
In the adjoining figure, $m(\text{arc NS}) = 125^\circ$, $m(\text{arc EF}) = 37^\circ$, find the measure of $\angle NMS$.

- 2 Two circles of radii 5.5 cm and 4.2 cm touch each other externally. Find the distance between their centres.

Q.5 Attempt the following

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- 1 Two circles having radii 3.5 cm and 4.8 cm touch each other internally. Find the distance between their centres.

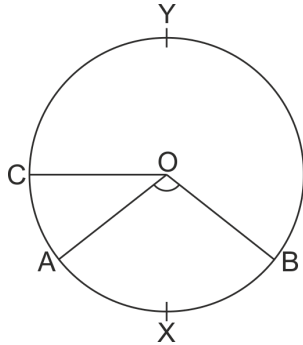


Let two circles with centres O and A touch each other internally at point T

- \therefore O - A - T ... [If two circles are touching circles then the common point lies on the line joining their centres]
 \therefore OT = _____ + _____ ... [O - A - T]
 \therefore OA = _____ ... [given]
 OT = 4.8 cm, AT = 3.5 cm.
 \therefore OA = _____
 OA = _____ cm
 \therefore The distance between the centres is _____ cm

- 2 In the following figure 'O' is the centre of the circle. $\angle AOB = 110^\circ$, $m(\text{arc AC}) = 45^\circ$.
 Use the information and fill in the boxes with proper numbers.

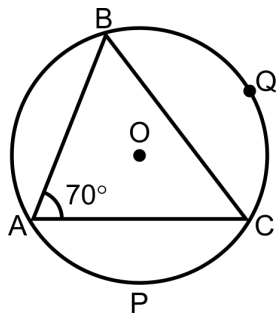
- i. $m(\text{arc AXB}) =$ _____ ii. $m(\text{arc CAB}) =$ _____
 iii. $\angle COB =$ _____ iv. $m(\text{arc AYB}) =$ _____



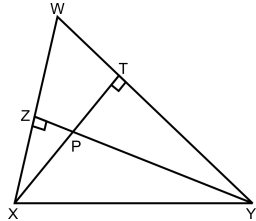
Q.6 Answer the following

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- 1 In the figure, $m(\text{arc APC}) = 100^\circ$ and $\angle BAC = 70^\circ$.
 Find i. $\angle ABC$ ii. $m(\text{arc BQC})$.



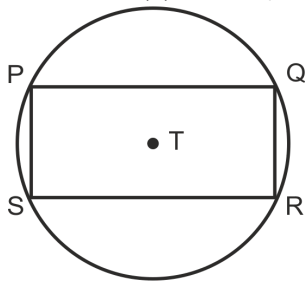
- 2 In altitudes YZ and XT of ΔWXY intersect at P. Prove that,
 (1) $\square WZPT$ is cyclic. (2) Points X, Z, T, Y are concyclic.



Q.7 Solve the following

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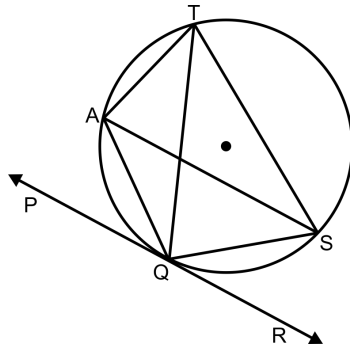
- 1 Prove: Theorem of internal division of chords.
 2 In the figure, a rectangle PQRS is inscribed in a circle with centre T.
 Prove that, (i) arc PQ \cong arc SR
 (ii) arc SPQ \cong PQR



Q.8 Answer the following

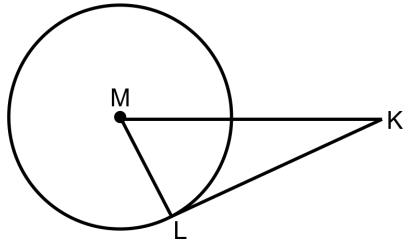
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- 1 In line PR touches the circle at point Q. Answer the following questions with the help of the figure.
 (1) What is the sum of $\angle TAQ$ and $\angle TSQ$?
 (2) Find the angles which are congruent to $\angle AQP$.
 (3) Which angles are congruent to $\angle QTS$?
 (4) $\angle TAS = 65^\circ$, find the measure of $\angle TQS$ and arc TS.
 (5) If $\angle AQP = 42^\circ$ and $\angle SQR = 58^\circ$ find measure of $\angle ATS$.



- 2 In M is the centre of the circle and seg KL is a tangent segment.
 If $MK = 12$, $KL = 6\sqrt{3}$ then find -
 (1) Radius of the circle.

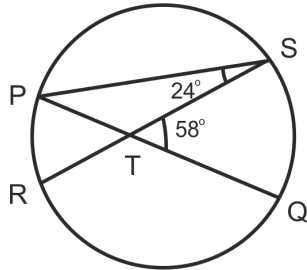
(2) Measures of $\angle K$ and $\angle M$.



Q.9 Answer the following

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- 1 In figure, chords PQ and RS intersect at T.



- (i) Find $m(\text{arc SQ})$ if $m\angle STQ = 58^\circ$, $m\angle PSR = 24^\circ$.
 - (ii) Verify, $\angle STQ = \frac{1}{2} [m(\text{arc PR}) + m(\text{arc SQ})]$
 - (iii) Prove that : $\angle STQ = \frac{1}{2} [m(\text{arc PR}) + m(\text{arc SQ})]$ for any measure of $\frac{1}{2} \angle STQ$.
 - (iv) Write in words the property in (iii).
- 2 In line l touches the circle with centre O at point P. Q is the mid point of radius OP. RS is a chord through Q such that chords $RS \parallel$ line l . If $RS = 12$ find the radius of the circle.

