CIRCLE – 1

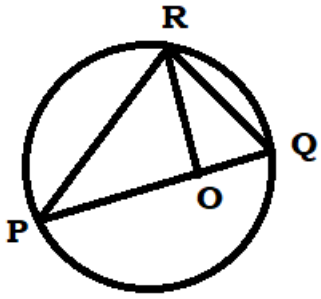
1.In two circles arcs of the same length subtend angles 60° and 75° at the centre then find the ratio of their radii?

A) 4 : 3 **B) 3 : 4** **C) 5 : 4** **D) 6 : 5**

2.Find the area of sector if length of arc is 10cm and radius is equal to 25cm

A) $100\ cm^2$ **B) $125\ cm^2$** **C) $150\ cm^2$** **D) $250\ cm^2$**

3. In the given figure, O is the centre of the circle and $\angle QOR = 50°$, then what is the value of $\angle RPQ$ (in degree) ?



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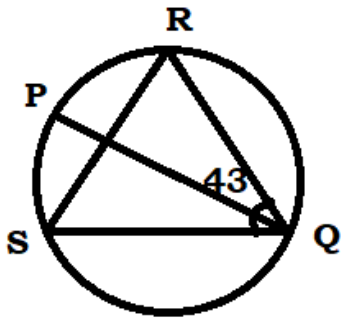
A) 15° **B) 25°** **C) 20°** **D) 30°**

4. ABCD is a quadrilateral whose side AB is the diameter of a circle through A, B, C and D. If $\angle ADC = 130°$, the measure of $\angle BAC$ is

A) 40° **B) 45°** **C) 35°** **D) 50°**

5. In the given figure, PQ is the diameter of the circle. What is the measure of $\angle QSR$?



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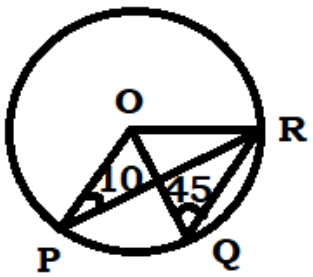
A) 51° **B) 37°** **C) 47°** **D) 43°**

6. In the given figure, Find the $\angle POQ$?



A) 55° **B) 65°** **C) 70°** **D) 60°**

7.In a circle with center O, AB is the diameter and CD is chord such that ABCD is a trapezium. If $\angle BAC = 23°$, then $\angle CAD$ is equal to

A) 52° B) 38° C) 44° D) 46°

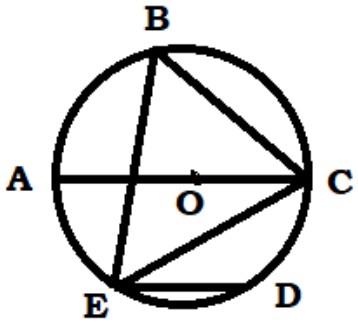
8.O and C are respectively orthocenter and circumcenter of an acute angle triangle PQR the point P and O are joined and produced to meet the side QR at S, if

$\angle QCR = 128°, \angle PQS = 54°$ then $\angle RPS = ?$

A) 28° B) 37° C) 23° D) 32°

9.In the given figure O is center of circle If ED || AC,

$\angle CBE = 65°$ then find $\angle DEC = ?$



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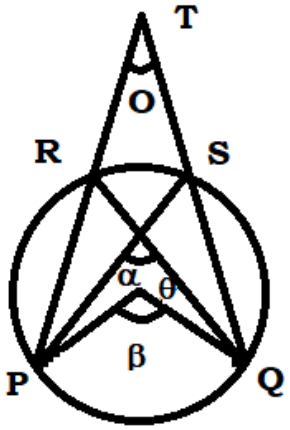
A) 29° B) 25° C) 35° D) 30°

10. AB is the diameter of circle AB = 14 cm and point 'P' is on the circumference of the circle such that PB = 12, $PN \perp AB$ then BN =?

A) $10\frac{2}{7}$ cm B) $11\frac{2}{7}$ cm C) $110\frac{5}{6}$ cm D) $10\frac{3}{7}$ cm

11. In the given figure 'O' is the centre of the circle and

$\theta = 50°, \alpha = 80°$ then $\beta = ?$



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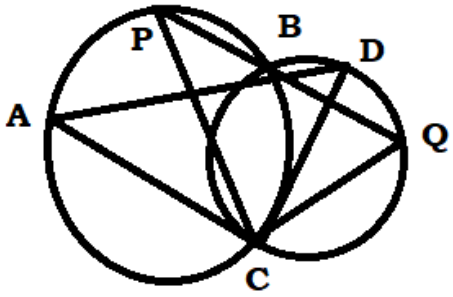
A) 100° B) 120° C) 110° D) 130°

12. In the figure two circles intersect at two points B and C.
Through B two line segment ABD and PBQ are drawn to intersect the circles at A, D and P, Q respectively.

If $\angle ACP = 50°$ what is the value of $\angle QCD = ?$



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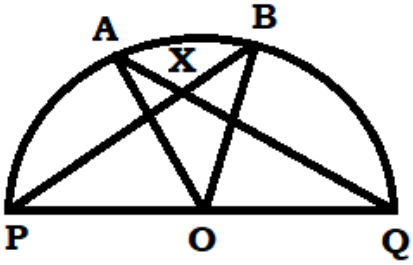
A) 65° B) 70° C) 50° D) 40°

13.Two chords AB and CD intersect each other at E, 'O' is the center of circle $\angle AOC = 40°$ and $\angle BOD = 50°$ then $\angle AEC = ?$

A) 45° B) 30° C) 60° D) 22.5°

14. If $\angle AXP = 56°$ then find $\angle AOB = ?$



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A) 79° B) 62° C) 56° D) 68°

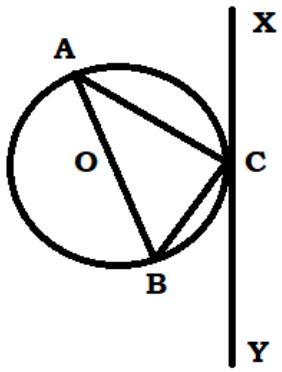
15. In a quadrilateral ABCD, AB is the diameter of circle, $\angle ABC = 65°$ and $\angle CAD = 45°$ then find $\angle ACD = ?$

A) 15° B) 20° C) 25° D) 30°

16.The chord of a circle is $\sqrt{3}$ times its radius. The angle subtended by this chord at the minor arc is k times the angle subtended at the major arc. What is the value of k?

A) 2 B) 5/2 C) 1 D) 3/2

17.If $\angle ACX = 35°$ find $\angle CAB = ?$



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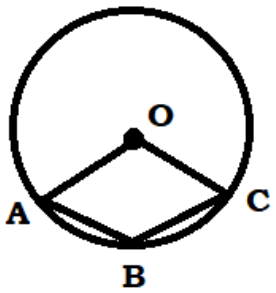
A) 55° B) 45° C) 35° D) 65°

18. In the given figure $\angle BAC = 20°$, $\angle BCA = 30°$ then $\angle AOC = ?$



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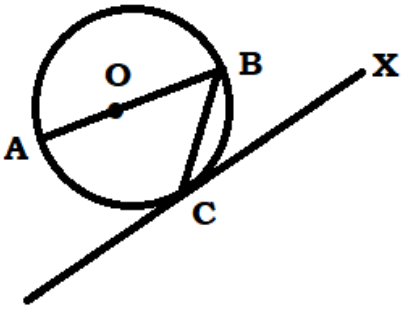
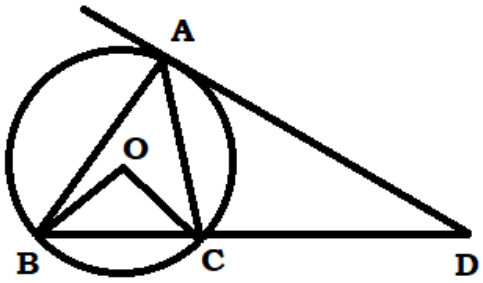
A) 50° B) 130° C) 60° D) 100°

19.In the given figure, If $\angle AOC = 80°$ then find $\angle BCX$?



A) 50° B) 40° C) 45° D) 55°

20.In the given figure, If $\angle CAD = 38°$
And $\angle CDA = 49°$ then find central angle made by chord BC = ?



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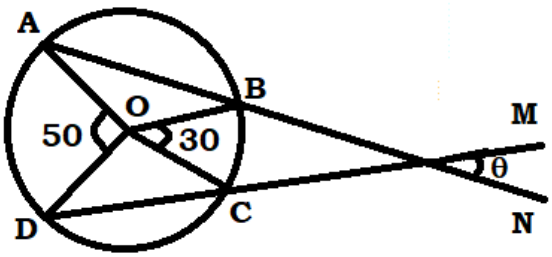
A) 116° B) 110° C) 130° D) 100°

21. In the given figure. O is the center of circle, Find θ ?



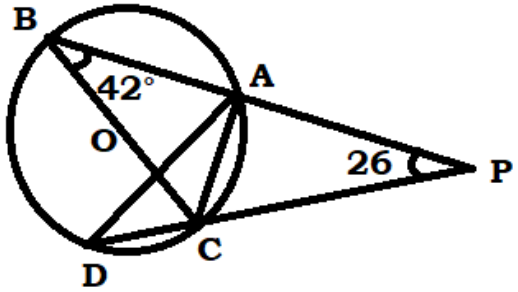
A) 10° B) 15° C) 20° D) 8°

22. PAT is a tangent to a circle at point A on it, and AB is a chord such that

$\angle BAT = 72°$. If C is a point on the circle such that $\angle CBA = 58°$, then what is the measure of $\angle CAB$?

A) 50° B) 62° C) 48° D) 60°

23.PAB and PCD are two secants of a circle BC is the diameter of circle with center O if $\angle PBC = 42°$ and $\angle BPD = 26°$ then find the measure of $\angle CAD$?



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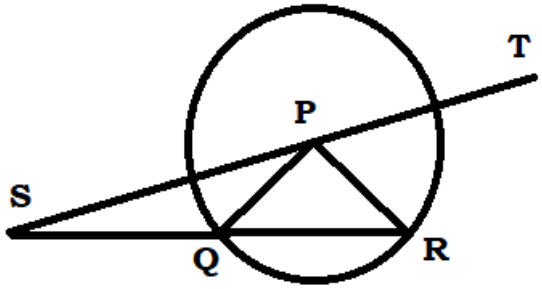
A) 22° B) 16° C) 34° D) 24°

24. In the given figure, P is the centre of the circle. If QS = PR, then what is the ratio of $\angle RSP$ to the $\angle TPR$?



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A) 1:4 B) 2:5 C) 1:3 D) 1:2

25.A rectangle ABCD is inscribed in a circle with center O. Its diagonals CA is produced to a point E, outside the circle. ED is a tangent to the circle at D. If AC = 2BC, then what is the measure of $\angle DEC$?

A) 30° B) 60° C) 15° D) 45°

26.In the given figure O is the centre of the circle. Line UTV is tangent to circle at T. $\angle VTR = 52°$ and ΔPTR is an isosceles triangle such that TP = TR. What is the value of $\angle x + \angle y + \angle z = ?$

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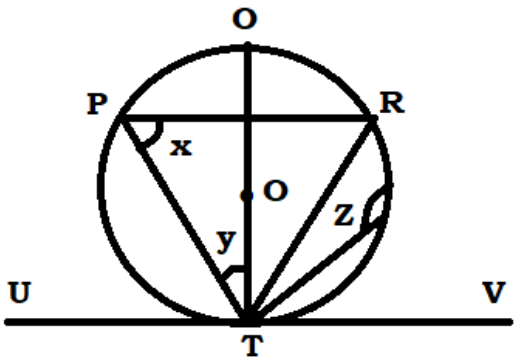

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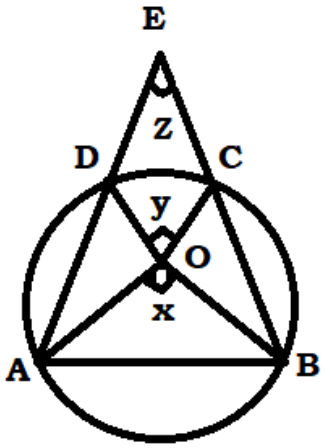
A) 175° B) 208° C) 218° D) 250°

27.In the given figure,

AD = CB, find $\frac{x-y}{z}$?



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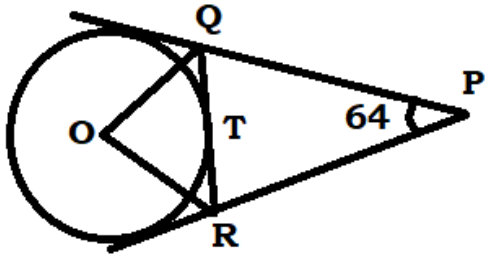
A) 1 B) 2 C) 1.5 D) 1.25

28.PA and PB are tangents to a circle with center O, from a point P outside the circle, A and B are points on the circle. C is a point on minor arc AB, If $\angle ACB = 115°$, then $\angle APB$ is equal to

A) 50° B) 40° C) 65° D) 60°

29.In the given figure O is the centre of the circle. Circle has 3 tangents if $\angle QPR = 64°$ then what is the value of $\angle QOR$.



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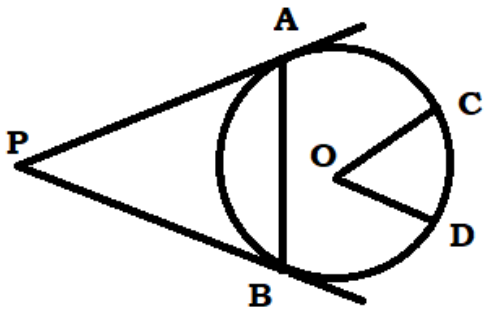
A) 64° B) 58° C) 48° D) 56°

30. In the given figure, $AB = 6\sqrt{3}cm$ radius = 6 cm

PA || OC and PB || OD then $\angle COD = ?$



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A) 30° B) 60° C) 45° D) 75°

31.O is the center of the circle to which PAX and PBY are tangents from a point P at points A and B. Q is a point on the circle, such that $\angle QAX = 49°$ and $\angle QBY = 62°$.

What is the measure of $\angle AQB$?

A) 67° B) 59° C) 69° D) 63°

32.There are two concentric circles of radius 8cm and 13cm. AB is the diameter of bigger circle there is a tangent BD on a smaller circle then find the length of AD?

A) 16 B) 17 C) 18 D) 19

33.There are two chords AB and CD of length 10cm and 24cm respectively and both are opposite of the center. If the distance between two chords is 17cm then find the radius of circle

A) 13 B) 14 C) 15 D) 10

34.AB and CD are two chords of a circle AB = 10cm, CD = 8cm, distance between two chords is 2cm. If both chords are same side of the center then find radius.

A) $\frac{5\sqrt{17}}{2}$ B) $\frac{5\sqrt{17}}{4}$ C) $\frac{5\sqrt{17}}{3}$ D) $5\sqrt{17}$

35.In a circle with center 'O' ABCD is a cyclic quadrilateral and AB is diameter chords AB and DC are produced to E. If $\angle CAE = 34°$ and $\angle E = 30°$ then $\angle CBD = ?$

A) 36 B) 24 C) 26 D) 34

36.In a circle with center 'O' AC and BD are two chords AC and BD meet at E when produced if AB is diameter and $\angle AEB = 68°$ then $\angle DOC = ?$

A) 30° B) 44° C) 32° D) 22°

37.In the given figure two circle passes through each other centres if $\angle CDE = 57°$, then find $\angle DCE = ?$

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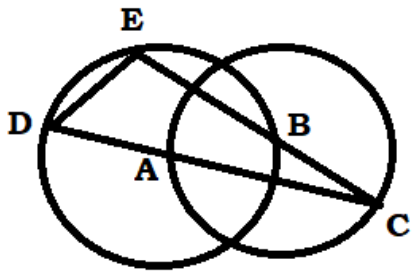

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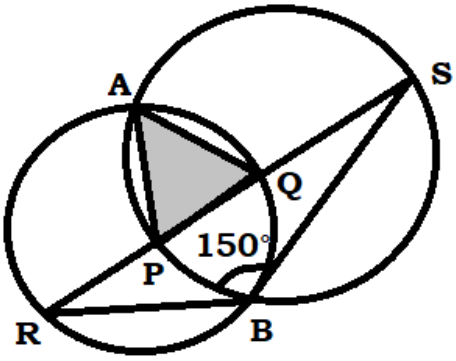
A) 19° **B) 22°** **C) 16.5°** **D) 26°**

38.In a circle with center O, AB is diameter. Points C, D and E are on the circle on one side of AB such that ABEDC is a pentagon. The sum of $\angle ACD$ and $\angle DEB$ is?

A) 240° **B) 225°** **C) 270°** **D) 180°**

39.Two circles intersect each other at point A and B respectively as shown in figure. where $\angle RBS = 150°$.

If AP = 6 cm and AQ = 8cm then find area of shaded region (ΔAPQ)?



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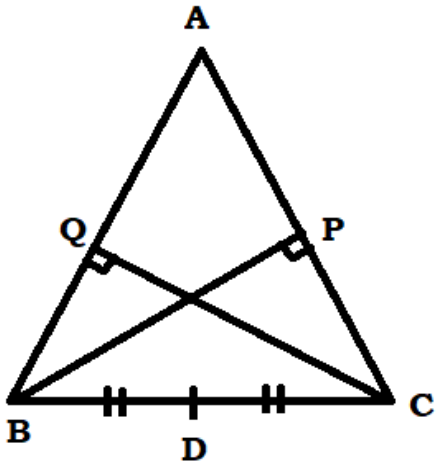
A) $12\sqrt{3}$ cm **B) $24\,cm^2$** **C) $12\,cm^2$** **D) $6\sqrt{2}$ cm^2**

40. In ΔABC, BP and CQ are perpendiculars on sides AC and AB respectively. $\angle BAC = 42°$, D is mid point of side BC. Find $\angle PDQ$?



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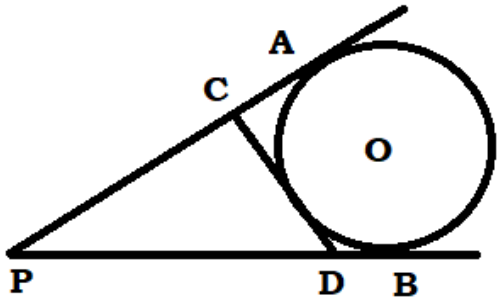
A) 84° **B) 111°** **C) 96°** **D) 102°**

41.A circle touches the side PQ of a ΔAPQ at the point R and sides AP and AQ produced at the points B and C respectively. Points B and C lie on circle. If the perimeter of $\Delta APQ = 30cm$, then the length of AB is?

A) 20 B) 10 C) 12 D) 15

42. ΔPCD, If PC = 8cm PD = 9cm and CD = 7cm then find radius of circle = ?



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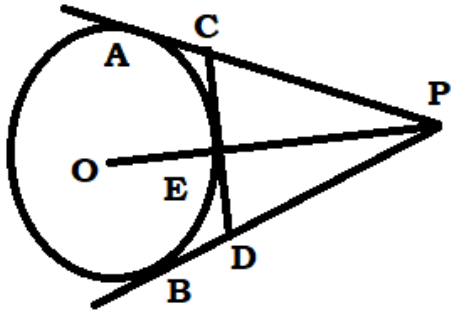
A) $2\sqrt{5}$ B) $\frac{12}{\sqrt{5}}$ C) $\frac{18}{\sqrt{6}}$ D) $\frac{8}{\sqrt{3}}$

43. If PE = 18 cm and radius of circle is 7cm then find tangent CD?

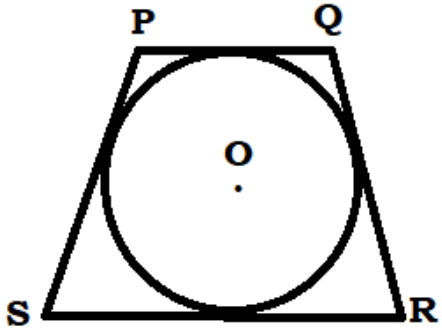


A) 12.5 B) 14 C) 10.5 D) 10.08

44. In the given figure, a circle touches the sides of the quadrilateral PQRS. The radius of the circle is 12cm

$\angle RSP = \angle SRQ = 60°$, and $\angle PQR = \angle QPS = 120°$

What is the perimeter (in cm) of the quadrilateral?



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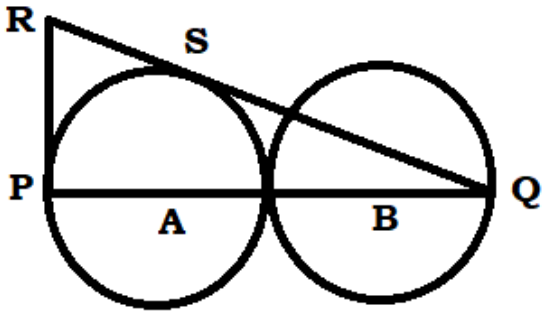
A) $48\sqrt{3}$ B) $64\sqrt{3}$ C) $72\sqrt{3}$ D) $60\sqrt{3}$

45. In the given figure, two identical circles of radius 4cm touché each other. A and B are the centers of the two circles. If RP is a tangent to the circle, then what is the length (in cm) of RS?



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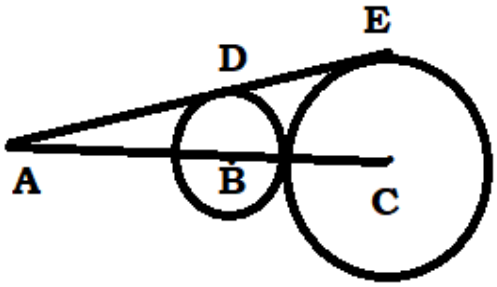
A) $3\sqrt{3}$ B) $2\sqrt{6}$ C) $4\sqrt{2}$ D) $6\sqrt{2}$

46. In the given figure, B and C are the centres of the two circles. ADE is the common tangent to the two circles. If the ratio of the radius of both the circles is 3:5 and AC = 40, then what is the value of DE ?



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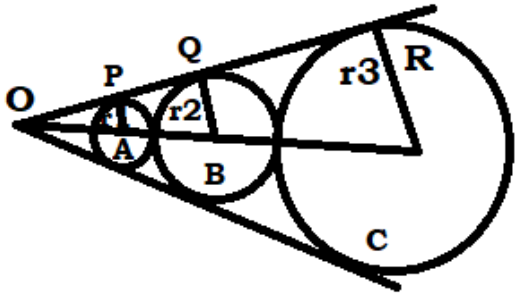
A) $3\sqrt{15}$ B) $5\sqrt{15}$ C) $6\sqrt{15}$ D) $4\sqrt{15}$

47. Three circles with radii r1, r2 and r3 (where r1 < r2< r3) are placed as shown in the given figure. What is the value of r2?



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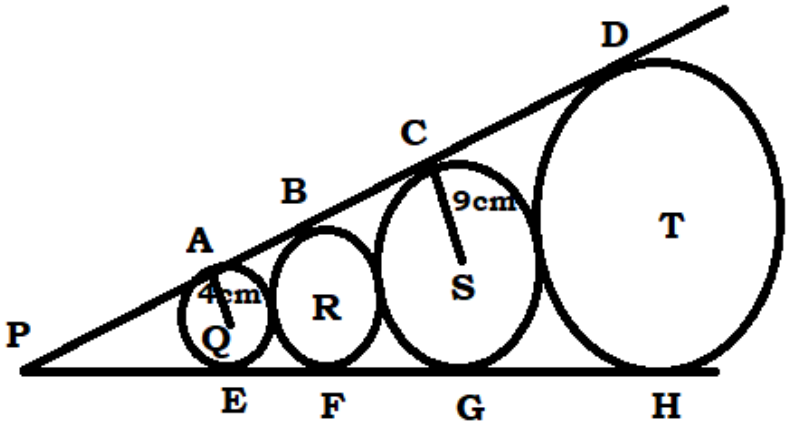
A) $\sqrt{r1r3}$ B) $\sqrt{r1+r3}$ C) $\frac{r1+r3}{2}$ D) $\frac{2r1r3}{r1+r3}$

48. Four circles are placed as shown in figure, find the value of PD?



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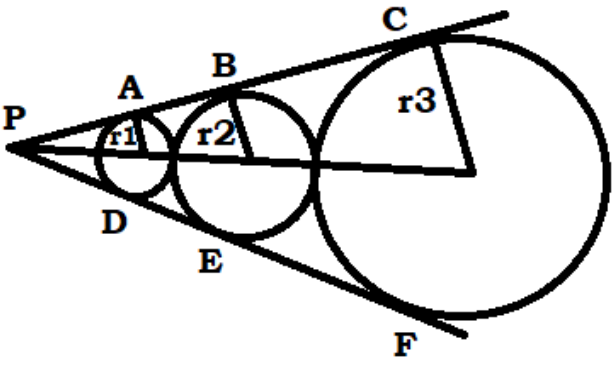
A) $27\sqrt{6}$ B) $26\sqrt{3}$ C) $45\sqrt{2}$ D) $36\sqrt{6}$

49. In the adjoining figure $\angle CPF$ is a right angle there are three circles which just touch each other and PC and PF are the tangents to all the three circles then find r3 : r1 = ?



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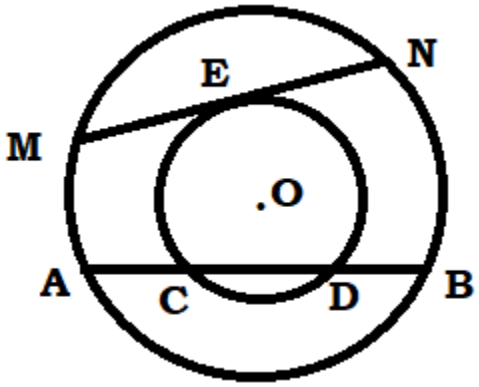
A) $17 : 12\sqrt{2}$ B) $(17 - 12\sqrt{2}) : 1$

C) $1 : (17 - 12\sqrt{2})$ D) $12 : 17\sqrt{2}$

50. In the figure AB = 40cm and CD = 32cm find MN?



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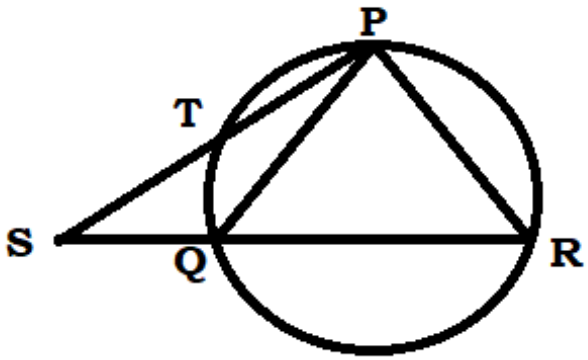
A) 16 B) 24 C) 28 D) 25

51. In the figure ΔPQR is equilateral, ST = 4cm and TP = 6cm then find area of ΔPQR ?



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A) $10\sqrt{3}$ B) $15\sqrt{3}$ C) $12\sqrt{3}$ D) $16\sqrt{3}$

52.A circle touches the sides of a ΔABC i.e., AB, BC and AC at P, Q and R respectively AB = 10 cm, BC = 12 cm and AC = 14 cm then AP = ?

A) 5 B) 6 C) 6.5 D) 5.5

53.ABCD is a quadrilateral $\angle D = 90°$ a circle touch the sides AB, BC, CD and DA at P, Q, R and S respectively. BC = 38 cm, CD = 25 cm and PB = 27 cm. Then find radius of circle ?

A) 13 B) 15 C) 14 D) 13.5

54.AB is the diameter of the circle CD and BD are two chords such that CD = BD and AB and CD intersect at 'O' if $\angle AOD = 45°$ then $\angle ACD$ = ?

A) 60° B) 50° C) 45° D) 30°

55.There are two chords AB and AC of equal length 8cm. CB is produced to point 'P' AP cuts circle at T such that AT = 5cm then PT = ?

A) 8 B) 7.8 C) 7.6 D) 7.5

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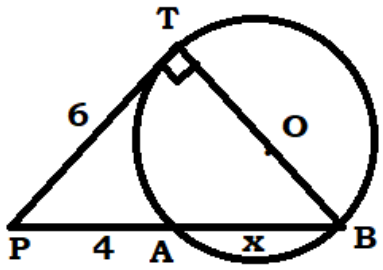
CIRCLE – 2

1.From a point P outside a circle, PAB is a secant and PT is a tangent to the circle, where A, B and T are the points on the circle. If PT = 7cm, PA = 5cm and AB = x cm, then x is equal to

A) 3.6 B) 4.5 C) 4.8 D) 5.6

2.In the given figure TB passes through centre O. What is the radius of the circle?



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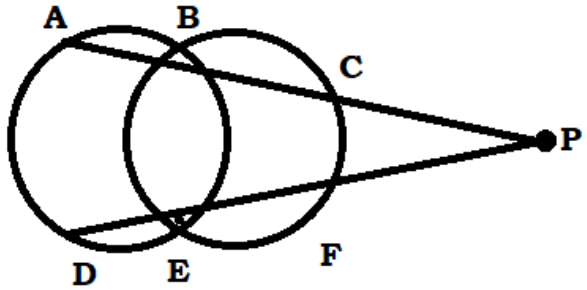
A) $\frac{2\sqrt{5}}{3}$ B) $\frac{3\sqrt{2}}{5}$ C) $\frac{3\sqrt{5}}{2}$ D) $\frac{2\sqrt{3}}{5}$

3.In the given figure PC = 9cm, PB = 12cm, PA = 18 cm, PF = 8 cm then DE = ?



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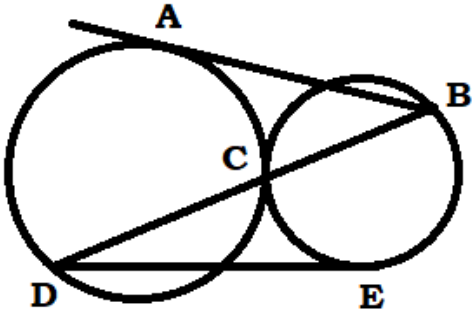
A) 3 B) 3.5 C) 2.5 D) 2

4. ABC is an osoceles triangle AB = AC, a circle passing through B touch AC at mid poind and cut AB at P then AP : AB = ?

A) 1:3 B) 1:4 C) 1:2 D) 2:3

5.Two circle touch each other at point C. If AB = 8cm, DE = 15 cm then BD = ?



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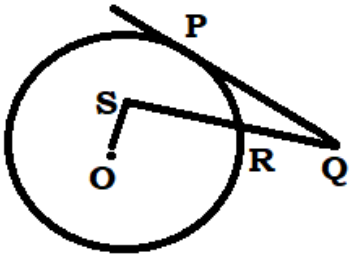
A) $4\sqrt{30}$cm B) 19 cm C) 23 cm D) 17 cm

6.In the figure QP is a tangent and O is the center of circle. OS = 3cm, PQ = 8cm, QR = 4cm and SR = 5cm find the radius of circle?



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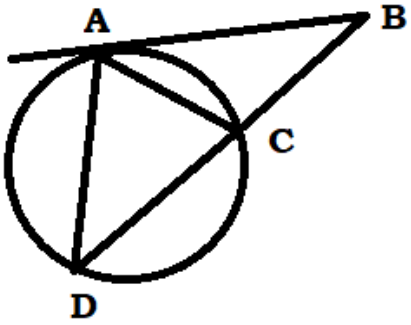
A) $3\sqrt{7}$ B) $2\sqrt{11}$ C) $4\sqrt{5}$ D) $3\sqrt{13}$ / 2

7.Two chords AB and CD of a circle intersect at E. AB is diameter and $CD \perp AB$ AE = 2cm, AB = 10cm then ED = ?

A) 3 B) 5 C) 4 D) 2.5

8.In the given figure AB is tangent to circle if AC = BC = 9cm and CD = 7cm then AD = ?



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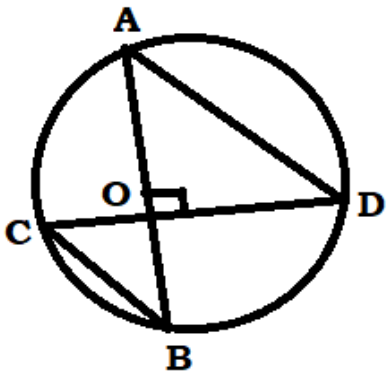
A) 12 cm B) 8 cm C) 16 cm D) 10 cm

9. Two chords AB and CD intersect at 90° if AD = 16cm and BC = 12cm then find the area of circle ?



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A) 144π B) 96π C) 98π D) 100π

10.Two chords of length 20 cm and 24 cm are drawn perpendicular to each other in a circle of radius 15cm. What is the distance between the points of intersection of these chords (in cm) from the centre of the circle?

A) $\sqrt{214}$ B) $\sqrt{182}$ C) $\sqrt{206}$ D) $\sqrt{218}$

11.2a' and 2b' are the length of two chords which intersect at right angle. If the distance between the centre of the circle and the intersecting point of the chords is 'c' then the radius of the circle is

A) $\frac{\sqrt{(a2 + b2 + c2)}}{2}$ B) $\sqrt{(a^2 + b^2 + c^2)}$

C) $\sqrt{\frac{a^2 + b^2 + c^2}{2}}$ D) $\sqrt{(a^2 + b^2 - c^2)}$

12.A circle is inscribed in a quadrilateral ABCD touching AB, BC, CD and AD at P, Q, R and S respectively. If $\angle B = 90°$, AD = 24 cm, AB = 27cm and DR = 6cm then find the circumference of the circle?

A) $20\ \pi$ B) $18\ \pi$ C) $12\ \pi$ D) $15\ \pi$

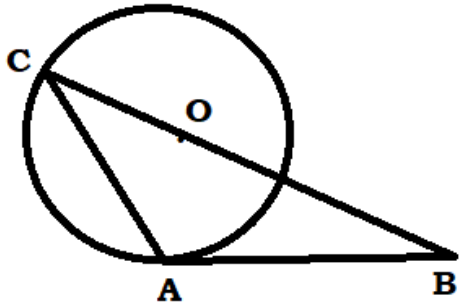
13.PQRS is a cyclic quadrilateral PQ = 14.4cm, QR = 12.8 cm and SR = 9.6cm. If PR bisect

QS then PS =?

A) 15.8 B) 19.2 C) 16.4 D) 13.6

14. In the given figure ΔABC is drawn such that AB is tangent to a circle at A whose radius is 10cm and BC passes through centre of the circle. Point C lies on the circle.

If BC = 36 cm and AB = 24 cm then what is the area of ΔABC ?



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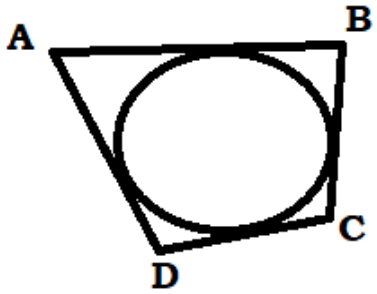
A)134.5 B) 148 C) 180 D) 166.15

15. In the given figure, a circle is inscribed in quadrilateral ABCD. If AB = 2x + 3, BC = 3x -1, CD = x + 6 and DA = x + 4, then what is the value of x?



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A) 3 B) 4.5 C) 6 D) 6.5

16.Two tangents are drawn at the ends point of diameter AB of a circle. X is any point on circumference of circle. BX is extended which meets one tangent at point C and AX is extended which meets another tangent at point D. where BD = 18 cm and AC = 8 cm. Find the radius of circle?

A) 4.8 cm B) $\frac{72}{13}$ cm C) 6.5 cm D) 6 cm

17. In the given figure, CD and AB are diameters of circle and AB and CD are perpendicular to each other, LQ and SR
are perpendiculars to AB and CD respectively. Radius of circle is 5 cm, CN : ND = 2:3 and PB : PA = 2:3.
What is the length (in cm) of SM?

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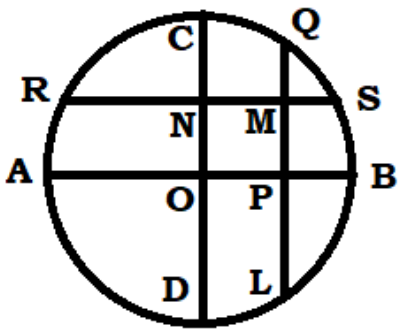

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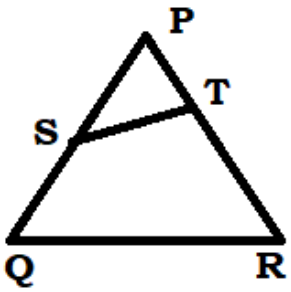
A) $\left[\begin{array}{cc} 5\sqrt{3} & -3 \end{array}\right]$

B) $\left[\begin{array}{cc} 4\sqrt{3} & -2 \end{array}\right]$

C) $\left[\begin{array}{cc} 2\sqrt{5} & -1 \end{array}\right]$

D) $\left[\begin{array}{cc} 2\sqrt{6} & -1 \end{array}\right]$

18.In the given figure QRTS is quadrilateral. If PT = 5cm, SQ = 4cm, PS = 6cm and $\angle PQR = \angle PTS = 63^\circ$ then find the length of TR?



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A) 6cm B) 7cm C) 9cm D) 8cm

19.On a triangle ABC, a circle with diameter BC is drawn, intersecting AB and AC at points P and Q respectively. If the lengths of AB, AC and CP are 30cm, 25cm and 20cm respectively, then the length of BQ, in cm is

A) 24 B) 18 C) 32 D) 22.5

20.Two circles of diameters 4.8cm and 8cm are such that the distance between their centers is 6.5cm. What is the length of a common tangent to the circles that does not intersect the line joining the centers?

A) 6.3 cm B) 6.2 cm C) 6.1 cm D) 6.0 cm

21.The distance between the centers of two circles is 61 cm and their radius are 35 cm and 24 cm, what is the length (in cm) of the direct common tangent to the circles?

A) 60 B) 54 C) 48 D) 72

22.If the given figure, E and F are the centres of two identical circles. What is the ratio of area of triangle AOB to the area of triangle DOC ?

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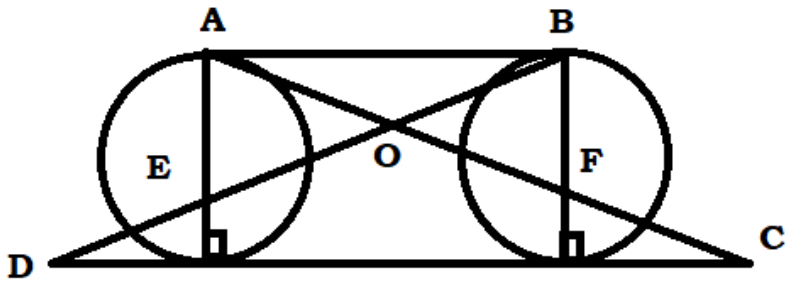

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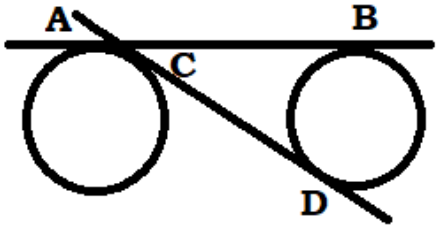
A) 1 : 3 **B) 1 : 9** **C) 1 : 8** **D) 1 : 4**

23.Two concentric circles are of radii 15cm and 9cm. What is the length of the chord of the larger circle which is tangent to the smaller circle?

A) 24cm **B) 18cm** **C) 20cm** **D) 25cm**

24.In the given figure below, two congruent circles with radius 5cm have two common tangents AB and CD respectively these tangents touch the circles at A, C, B and D respectively. If the length of CD is 24cm, what is the length of tangent AB ?



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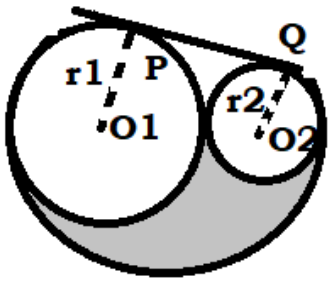
A) 30cm **B) 25cm** **C) 26cm** **D) 27cm**

25.If PQ = 6cm then find the area of shaded region ?



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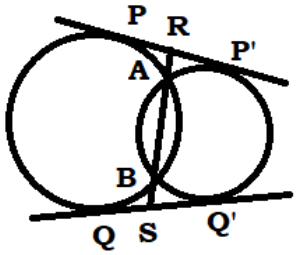
A) 9π **B) 12π** **C) 15π** **D) 8π**

26. PP' and QQ' are two direct common tangents to two circles intersecting at points A and B. The common chord on produced intersect PP' at R and QQ' at S. which of the following is true?



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A) $RA^2 + BS^2 = AB^2$ B) $RS^2 = PP'^2 + AB^2$

C) $RS^2 = PP'^2 + QQ'^2$ D) $RS^2 = BS^2 + PP'^2$

27.Two circles having radius 'a' cm and 'b' cm touch each other externally. Another circle whose radius is 'c' cm, touches both the circles and also their common tangent. Then which of the following statement will be true?

A) $\sqrt{a} + \sqrt{b} = \sqrt{c}$ B) $\sqrt{a} = \sqrt{b} + \sqrt{c}$

C) $\sqrt{ab} + \sqrt{bc} = \sqrt{ac}$ D) $\frac{1}{\sqrt{a}} + \frac{1}{\sqrt{b}} = \frac{1}{\sqrt{c}}$

28.Find the length of common chord of two circles of radii 30cm and 40cm, whose centres are 50cm apart?

A) 42cm B) 48cm C) 50cm D) 45cm

29.Two intersecting circles have a common chord of length 24cm the radii of the circle are 20cm and 37cm. Find the distance between the centre of circles?

A) 51cm B) 49cm C) 48cm D) 52cm

30.Two circles of radii 15cm and 12cm intersect each other, and the length of their common chord is 18cm. What is the distance (in cm) between their centers?

A) $18 + \sqrt{7}$ B) $15 + \sqrt{7}$ C) $12 + 2\sqrt{7}$ D) $12 + 3\sqrt{7}$

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