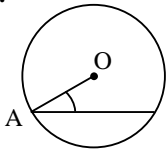


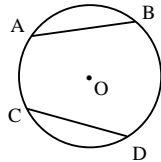
1.



[AB] is any chord of the circle with center O. Given $|AB| = \sqrt{2} \cdot |OA|$, what is the measure of angle OAB in degrees?

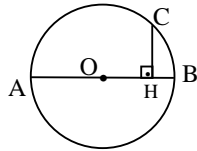
- A) 30 B) 45 C) 50 D) 60 E) 65

2. In the given figure, the distances from the chords AB and CD to the center of the circle are 6 cm. If $|AB| = 2n + 4$ cm and $|CD| = 3n - 2$ cm, what is the radius of the circle?



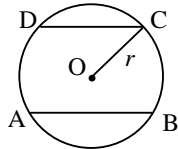
- A) 5 B) 8 C) 10 D) 13 E) 15

3. If $|CH| = 4$ cm and $|HB| = 2$ cm, find the radius of the circle.



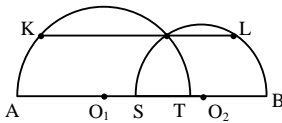
- A) 5 B) 6 C) 8 D) 10 E) 16

4. In the figure $[AB] \parallel [CD]$, $|AB| = 16$, $|CD| = 12$ and $r = 10$. Find the distance between the chords.



- A) 10 B) 12 C) 13 D) 14 E) 15

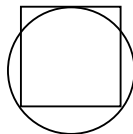
5.



Two semicircles with centers O_1 and O_2 are given. If $[KL] \parallel [AB]$, $|KL| = 20$, $|ST| = 3$, then find $|AB|$.

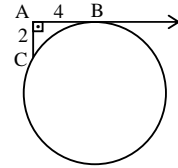
- A) 21 B) 22 C) 23 D) 24 E) 25

6. In the figure, a square and a circle are given. One side of the square is tangent to the circle and the two vertices are on the circle. If side length of the square is 12 cm, what is the radius of the circle?



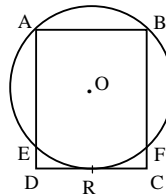
- A) 6 B) 7 C) 7.5 D) 8 E) 8.5

7. In the given figure, [AB] is tangent to the circle and $AC \perp AB$. If $|AB| = 4$ cm and $|AC| = 2$ cm, what is the radius of the circle?



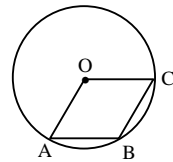
- A) 3 B) 4 C) 5 D) 6 E) 8

8. If $|ED| = 2$ cm, $|EA| = 4$ cm and ABCD is a rectangle, find the radius of the circle.



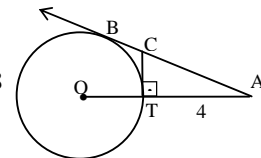
- A) 2 B) 3 C) 4 D) 5 E) 6

9. In the given figure, the radius of the circle is 12 cm. What is the altitude of the rhombus?



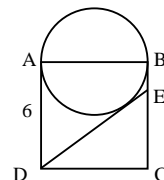
- A) 6 B) $4\sqrt{3}$ C) $6\sqrt{3}$ D) 9 E) 10

10. In the given figure, [AB] is tangent to the circle with center O and $[OA] \perp [CT]$. If $|AB| = 8$ and $|AT| = 4$, then $|CT| = ?$



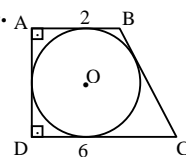
- A) 3 B) $\frac{8}{3}$ C) $2\sqrt{2}$ D) 2.5 E) 2

11. In the given figure, ABCD is a square and DE is tangent to the circle with diameter AB. If $|AD| = 6$ cm, what is the perimeter of the triangle CDE?



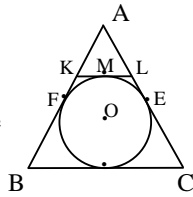
- A) 12 B) 16 C) 18 D) 20 E) 21

12. The right trapezoid ABCD is a circumscribed quadrilateral. If $|AB| = 2$ cm and $|DC| = 2$ cm, then find the radius of the circle.



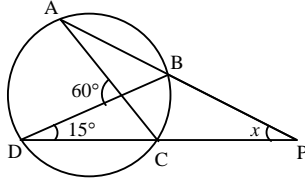
- A) $\frac{3}{2}$ B) 4 C) $\frac{5}{2}$ D) 6 E) $\frac{7}{2}$

13. The perimeter of the triangle ABC is 26 cm and $|BC| = 10$ cm. If $[KL]$ is tangent to circle at the point M , find the perimeter of the triangle AKL .



- A) 3 B) 4 C) 5 D) 6 E) 7

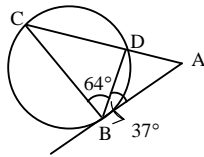
- 14.



Find x .

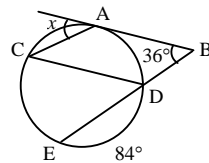
- A) 10° B) 15° C) 20°
D) 25° E) 30°

15. In the figure, AB is tangent to the circle. If $m(\widehat{BD}) = 64^\circ$ and $m(\widehat{AD}) = 37^\circ$, find $m(\widehat{ADB})$.



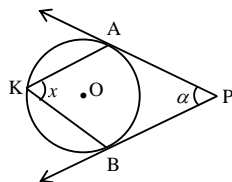
- A) 37° B) 64° C) 79° D) 101° E) 143°

16. In the given figure, $AB \parallel CD$ and AB is tangent to circle. If $m(\widehat{B}) = 36^\circ$ and $m(\widehat{ED}) = 84^\circ$, find the value of x .



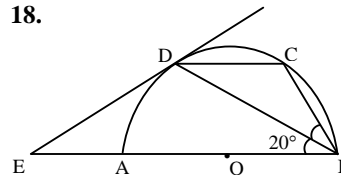
- A) 36° B) 51° C) 54° D) 56° E) 60°

17. $[PA]$ and $[PB]$ are tangents of the circle. Find x , in terms of α .



- A) $180 - 2\alpha$
B) $90 - 2\alpha$
C) $90 - \alpha$
D) $90 - \frac{\alpha}{2}$ E) $90 + \frac{\alpha}{2}$

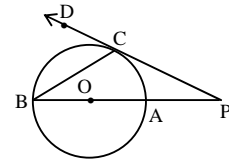
- 18.



If $|DC| = |CB|$ and $m(\widehat{DBA}) = 20^\circ$, then find $m(\widehat{DBC})$.

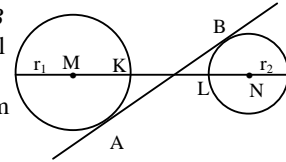
- A) 25° B) 30° C) 35° D) 40° E) 45°

19. If $[PC]$ is tangent to circle and $|PC| = |CB|$, find $m(\widehat{BCD})$.



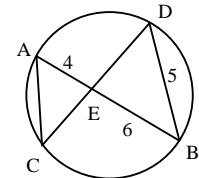
- A) 30 B) 45 C) 50 D) 60 E) 75

20. In the given figure, AB is the common internal tangent of the circles. If $r_1 = 9$ cm, $r_2 = 6$ cm and $|AB| = 8$ cm, find $|KL|$.



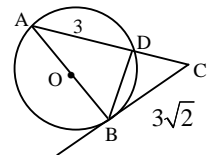
- A) 1 B) $\frac{3}{2}$ C) 2 D) 3 E) 4

21. In the given figure, $|AE| = 4$, $|BE| = 6$, $|CD| = 14$ and $|BD| = 5$. Find $|AC|$.



- A) $\frac{5}{3}$ B) 8 C) 9 D) 10 E) 11

22. In the given figure, CB is tangent to the circle with center O , $|BC| = 3\sqrt{2}$ and $|AD| = 3$. Find $|BD|$.



- A) 3 B) $2\sqrt{3}$ C) 2 D) $\sqrt{3}$ E) $\sqrt{2}$