



MATHS

BOOKS - S CHAND MATHS (ENGLISH)

CIRCLE

Multiple Choice Questions

1. The equation of the circle which touches x-axis and whose centre is (1,2) is

A. (a) $x^2 + y^2 - 2x - 4y + 4 = 0$

B. (b) $x^2 + y^2 - 2x - 4y + 1 = 0$

C. (c) $x^2 + y^2 + 2x + 4y - 1 = 0$

D. (d) $x^2 + y^2 + 2x - 4y + 1 = 0$

Answer: B



Watch Video Solution

2. The equation of a circle which touches both the coordinate axes and the line $x = 3$ is

A. $4x^2 + 4y^2 - 12x \pm 12y + 9 = 0$

B. $4x^2 + 4y^2 + 12x \pm 12y + 9 = 0$

C. $4x^2 + 4y^2 \pm 12x - 12y + 9 = 0$

D. $4x^2 + 4y^2 \pm 12x + 12y + 9 = 0$

Answer: A



Watch Video Solution

3. If a circle passes through the point $(0,0)$, $(a,0)$ and $(0,b)$, then the coordinates of its centre are

A. (a,b)

B. $\left(-\frac{a}{2}, -\frac{b}{2}\right)$

C. $\left(\frac{a}{2}, \frac{b}{2}\right)$

D. (-a, -b)

Answer: C



Watch Video Solution

4. The farthest distance of the point (1,5) from the circle $(x - 1)^2 + (y + 1)^2 = 16$ is

A. 4

B. 5

C. 6

D. 10

Answer: D



Watch Video Solution

5. If the lines $3x - 4y + 4 = 0$ and $6x - 8y - 7 = 0$ are tangents to a circle, then the radius of the circle is

A. $\frac{3}{4}$ units

B. $\frac{3}{2}$ units

C. 3 units

D. $\frac{2}{3}$ units

Answer: A



Watch Video Solution

6. If one end of a diameter of the circle

$x^2 + y^2 - 4x - 6y + 11 = 0$ is $(3, 4)$, then the

coordinates of the other end of the diameter
are

A. (a) (2,1)

B. (b) (-2,1)

C. (c) (1,2)

D. (d) (-1,-2)

Answer: C



Watch Video Solution

7. The equation of a circle concentric with the circle $x^2 + y^2 - 6x + 12y + 15 = 0$ and double its area is

A. $x^2 + y^2 - 6x + 12y + 30 = 0$

B. $x^2 + y^2 - 6x + 12y + 45 = 0$

C. $x^2 + y^2 - 6x + 12y - 30 = 0$

D. $x^2 + y^2 - 6x + 12y - 15 = 0$

Answer: D



Watch Video Solution

8. The equation of the circle concentric with $x^2 + y^2 - 3x + 4y + c = 0$ and passing through the point $(-1, -2)$ is

A. $x^2 + y^2 - 3x + 4y + 2 = 0$

B. $x^2 + y^2 - 3x + 4y - 1 = 0$

C. $x^2 + y^2 - 3x + 4y - 5 = 0$

D. $x^2 + y^2 - 3x + 4y = 0$

Answer: D



Watch Video Solution

9. If the point $(2,-3)$ lies on the circle $x^2 + y^2 + 2gx + 2fy + c = 0$ which is concentric with the circle $x^2 + y^2 + 6x + 8y - 25 = 0$, then the value of c is

A. (a) 1

B. (b) -1

C. (c) 49

D. (d) -49

Answer: B



Watch Video Solution

10. Find the equation of the circle which passes through the origin and cuts off intercepts -2 and 3 from the coordinate axes .

A. $x^2 + y^2 + 2x + 3y = 0$

B. $x^2 + y^2 + 2x - 3y = 0$

C. $x^2 + y^2 - 2x + 3y = 0$

D. $x^2 + y^2 - 2x - 3y = 0$

Answer: B



Watch Video Solution

11. The equation of the smallest circle passing through the point (1,0) and (0,1) is

A. $x^2 + y^2 + x + y = 0$

B. $x^2 + y^2 - x - y = 0$

C. $x^2 + y^2 - x - y + 2 = 0$

D. $x^2 + y^2 - x - y - 1 = 0$

Answer: B



12. If the equation

$$kx^2 + (2k - 3)y^2 - 6x + 4y + 3 = 0$$

represents a circle, then its centre is

A. $\left(-1, \frac{2}{3}\right)$

B. $\left(2, -\frac{4}{3}\right)$

C. $\left(1, -\frac{2}{3}\right)$

D. $\left(1, \frac{2}{3}\right)$

Answer: C



13. The equation of two diameters of a circle are $x - y = 5$ and $2x + y = 4$ and the radius of the circle is 5 units, then the equation of the circle is

A. $x^2 + y^2 - 6x + 4y - 12 = 0$

B. $x^2 + y^2 + 6x - 4y - 12 = 0$

C. $x^2 + y^2 + 6x + 4y + 12 = 0$

D. $x^2 + y^2 - 6x + 4y + 12 = 0$

Answer: A



Watch Video Solution

14. The equation of the circle whose center is $(3,-2)$ and which touches the line $3x - 4y + 13 = 0$ is

A. $x^2 + y^2 + 6x - 4y - 23 = 0$

B. $x^2 + y^2 - 6x - 4y - 23 = 0$

C. $x^2 + y^2 - 6x + 4y - 23 = 0$

D. $x^2 + y^2 + 6x + 4y + 23 = 0$

Answer: C



Watch Video Solution

15. The equation of the incircle of the triangle formed by the coordinate axes and the line $4x + 3y - 6 = 0$ is

(A) $x^2 + y^2 - 6x - 6y - 9 = 0$

(B) $4(x^2 + y^2 - x - y) + 1 = 0$

(C) $4(x^2 + y^2 + x + y) + 1 = 0$

(D) $4(x^2 + y^2 - x - y) - 1 = 0$

A. $x^2 + y^2 - 6x - 6y - 9 = 0$

B. $4(x^2 + y^2 - x - y) + 1 = 0$

C. $4(x^2 + y^2 + x + y) + 1 = 0$

D. $4(x^2 + y^2 - x - y) - 1 = 0$

Answer:



Watch Video Solution

16. Equation of a circle which passes through (3,6) and touches the axes is

A. $x^2 + y^2 + 6x + 6y + 3 = 0$

B. $x^2 + y^2 - 6x - 6y - 9 = 0$

C. $x^2 + y^2 - 6x - 6y + 9 = 0$

D. none of these

Answer: C



Watch Video Solution

17. If the circle $x^2 + y^2 + 2gx + 8y + 16 = 0$ touches the x axis, then the values of g are

A. A. ± 16

B. B. ± 8

C. C. ± 4

D. D. ± 2

Answer: C



Watch Video Solution

18. If the circle $2x^2 + 2y^2 = 5x$ touches the line $3x + 4y = k$, then the values of k are

A. $-10, \frac{5}{2}$

B. $10, -\frac{5}{2}$

C. $10, \frac{5}{2}$

D. $5, \frac{5}{4}$

Answer: B



Watch Video Solution

19. Equation of the circle with centre lies on y-axis and passing through the origin and the point (2,3) is

A. $x^2 + y^2 + 13y = 0$

B. $3x^2 + 3y^2 - 13y^2 = 0$

C. $6x^2 + 6y^2 - 13x = 0$

D. $x^2 + y^2 + 13x + 3 = 0$

Answer: B



Watch Video Solution

20. If the centroid of an equilateral triangle is (1,1) and its one vertex is (2,-1) , then equation of the circumcircle of the triangle is

A. $x^2 + y^2 - 2x - 2y - 3 = 0$

B. $x^2 + y^2 - 4x + 2y = 0$

C. $x^2 + y^2 + 2x + 2y - 3 = 0$

D. $x^2 + y^2 - 2x + 2y + 3 = 0$

Answer: A



Watch Video Solution

21. The equation of a circle with origin as centre and passing through the vertices of an

equilateral triangle whose median is of length

$3a$ is

A. A. $x^2 + y^2 = 4a^2$

B. B. $x^2 + y^2 = 9a^2$

C. C. $x^2 + y^2 = 16a^2$

D. D. $x^2 + y^2 = a^2$

Answer: A



Watch Video Solution

22. The circle $x^2 + y^2 + 2gx + 2fy + c = 0$

does not intersect the y-axis if

A. $g^2 < c$

B. $f^2 < c$

C. $4f^2 < c$

D. $f^2 < 4c$

Answer: B



Watch Video Solution

23. If the circles $x^2 + y^2 = k$ and $x^2 + y^2 + 8x - 6y + 9 = 0$ touch externally, then the value of k is

- A. 1
- B. -1
- C. 9
- D. 81

Answer: A



Watch Video Solution

24. The equation of the diameter of the circle $x^2 + y^2 - 6x + 2y = 0$ which passes through origin is

A. $y + 3x = 0$

B. $x - 3y = 0$

C. $x + 3y = 0$

D. $y - 3x = 0$

Answer: C



Watch Video Solution

Example

1. The point diametrically opposite to the point $(-3, -4)$ on the circle $x^2 + y^2 + 2x + 4y - 3 = 0$ is (i) $(3, -4)$ (ii) $(-3, 4)$ (iii) $(1, 0)$ (iv) $(3, 4)$

A. $(3, -4)$

B. $(-3, 4)$

C. $(1, 0)$

D. $(3, 4)$

Answer: C



Watch Video Solution

2. If the lines $2x + 3y + 1 = 0$ and $3x - y - 4 = 0$ lie along two diameters of a circle of circumference 10π , then the equation of circle

is (i) $x^2 + y^2 + 2x + 2y + 23 = 0$ (ii)

$x^2 + y^2 - 2x - 2y - 23 = 0$ (iii)

$x^2 + y^2 - 2x + 2y - 23 = 0$ (iv)

$x^2 + y^2 + 2x - 2y + 23 = 0$

A. $x^2 + y^2 + 2x + 2y + 23 = 0$

B. $x^2 + y^2 - 2x - 2y - 23 = 0$

C. $x^2 + y^2 - 2x + 2y - 23 = 0$

D. $x^2 + y^2 + 2x - 2y + 23 = 0$

Answer: C



Watch Video Solution

3. The equation of the circle which, passes through the point $(-2, -3)$ and has its

centre on the negative direction of x-axis and
is of radius 5 units is `

A. $x^2 + y^2 + 12x + 11 = 0$

B. $x^2 + y^2 - 12x + 11 = 0$

C. $x^2 + y^2 - 12x - 11 = 0$

D. $x^2 + y^2 + 12x - 11 = 0$

Answer: A



Watch Video Solution

4. The equation of a circle which touches the y-axis at origin and whose radius is 3 units is

A. $x^2 + y^2 \pm 6y = 0$

B. $x^2 + y^2 \pm 6x = 0$

C. $x^2 + y^2 \pm 3x = 0$

D. $x^2 + y^2 \pm 3y = 0$

Answer: B



Watch Video Solution

5. The shortest distance of the point (8,1) from the circle $(x + 2)^2 + (y - 1)^2 = 25$ is

A. 15

B. 10

C. 5

D. 6

Answer: C



Watch Video Solution

6. The smallest circle with centre on y-axis and passing through the point (7,3) has radius

A. $\sqrt{58}$

B. 7

C. 3

D. 4

Answer: B



Watch Video Solution

7. If the equation

$$(4\lambda - 3)x^2 + \lambda y^2 + 6x - 2y + 2 = 0$$

represents a circle, then its centre is

A. (a) (3,-1)

B. (b) (3,1)

C. (c) (-3,1)

D. (d) (-3,-1)

Answer: C



Watch Video Solution

8. Equation of the circle whose centre is at (-5, 4) and the radius is 7 is



[Watch Video Solution](#)

9. The equation of the circle described on the line joining the points (3, 4) and (2, -7) as diameter is $(x - 3)(x - 2) + (y - 4)(y + 7) = 0$ i.e $x^2 + y^2 - 5x + 3y - 22 = 0$.



[Watch Video Solution](#)

10. Show that for the circle

$$x^2 + y^2 - 8x - 10y + 7 = 0 \text{ centre is } (4,5)$$

and radius = $\sqrt{34}$



[Watch Video Solution](#)

11. Find the lengths of the intercepts of the

$$\text{circle } x^2 + y^2 - 5x - 13y - 14 = 0 \text{ on the}$$

axes of co-ordinates



[Watch Video Solution](#)

12. Find the equation of the circle which passes through the points (1,1), (0, -1) and (-2, 0)



Watch Video Solution

13. Find the points in which the line $y = 2x + 1$ cuts the circle $x^2 + y^2 = 2$.



Watch Video Solution

14. Find the length of the chord intercepted by the circle $x^2 + y^2 - 8x - 6y = 0$ on the line $x - 7y - 8 = 0$.



[Watch Video Solution](#)

15. Find the equation of the circle centre $C(1,2)$ and tangent $x+y-5=0$



[Watch Video Solution](#)

16. Find the equation of the tangent to the circle $x^2 + y^2 - 2x + 8y - 23 = 0$ at the point P(3, - 10) on it.



[Watch Video Solution](#)

17. Write the equation of the circle having radius 5. and tangent as the line' $3x - 4y + 5 = 0$ at (1,2).



[Watch Video Solution](#)

18. Find the value of p so that the straight line $x \cos \alpha + y \sin \alpha - p$ may touch the circle $x^2 + y^2 - 2ax \cos \alpha - 2ay \sin \alpha = 0$.



Watch Video Solution

19. Find the condition, that the line $lx + my + n = 0$ may be a tangent to the circle $(x - h)^2 + (y - k)^2 = r^2$.



Watch Video Solution

20. Prove that the straight line $y = x + a\sqrt{2}$ touches the circle $x^2 + y^2 - a^2 = 0$ Find the point of contact.



Watch Video Solution

21. Find the equations of the tangents to the circle $x^2 + y^2 = 16$ drawn from the point (1,4).



Watch Video Solution

22. Find the locus of the point of intersection of perpendicular tangents to the circle $x^2 + y^2 = 4$



Watch Video Solution

23. Find the equations of the two tangents to the circle $x^2 + y^2 - 8x - 10y - 8 = 0$ which are perpendicular to the line $5x - 12y = 2$.



Watch Video Solution

Exercise 17 A

1. Find the equation of the circle (i) whose centre is $(4,5)$, radius is 7, (ii) whose centre is $(0, -4)$ and which touches the x-axis, (iii) which passes through the origin and cuts off intercepts of length 'a', each from positive direction of the axes.



[Watch Video Solution](#)

2. Find the equation of the circle

(i) whose centre is (a,b) which passes through the origin

(ii) whose centre is the point $(2,3)$ and which passes through the intersection of the lines $3x-2y-1=0$ and $4x+y-27=0$



Watch Video Solution

3. Find the equation of the circle which has A $(1, 3)$ and B $(4,5)$ as opposite ends of a

diameter. Find also the equation of the perpendicular diameter.



[Watch Video Solution](#)

4. Find the equation to the circles which pass through the origin and cut off intercepts equal to (i) 3 and 4, (ii) $2a$ and $2b$ from the x -axis and the y -axis respectively.



[Watch Video Solution](#)

5. Find the equation of the circles which touch the axis of x at a distance of 4 from the origin and cut off an intercept of 6 from the axis of y .



[Watch Video Solution](#)

6. A circle having its centre in the first quadrant touches the y -axis at the point $(0,2)$ and passes through the point $(1,0)$. Find the equation of the circle



[Watch Video Solution](#)

7. Obtain the equation of the circle, radius 2 units, which lies in the positive quadrant and touches both axes of co-ordinates. Find also the equation of the circle, with centre (6, 5) which touches the above circle externally.



[Watch Video Solution](#)

8. Obtain the equation of the circle, centre (1, 0), which passes through the point $P(3, 1\frac{1}{2})$.

Find also the equation of the equal circle which touches the given circle externally at P.



[Watch Video Solution](#)

9. Calculate the co-ordinates of the foot of the perpendicular from the point $(-4, 2)$ to the line $3x + 2y = 5$. Also find the equation of the smallest circle passing through $(-4, 2)$ and having its centre on the line $3x + 2y = 5$.



[Watch Video Solution](#)

10. The point diametrically opposite to the point $P(1, 0)$ on the circle $x^2 + y^2 + 2x + 4y - 3 = 0$ is

A. $(3, -4)$

B. $(-3, 4)$

C. $(-3, -4)$

D. $(3, 4)$.

Answer: C



Watch Video Solution

Exercise 17 B

1. Find the centre and radius of the circle

(i) $x^2 + y^2 + 4x - 1 = 0$

(ii) $2x^2 + 2y^2 = 3x - 5y + 7$



[Watch Video Solution](#)

2. Find the lengths of the intercepts of the circle $3x^2 + 3y^2 - 5x + 3y = 0$ on the coordinate axes



[Watch Video Solution](#)

3. Find the equation of the circle, which passes through the point (5,4) and is concentric with the circle $x^2 + y^2 - 8x - 12y + 15 = 0$.



[Watch Video Solution](#)

4. The radius of the circle $x^2 + y^2 - 2x + 3y + k = 0$ is $2\frac{1}{2}$. Find the value of k . Find also the equation of the

diameter of the circle, which passes through the point $\left(5, 2\frac{1}{2}\right)$



[Watch Video Solution](#)

5. Prove that the circle

$$x^2 + y^2 - 6x - 2y + 9 = 0$$

(i) touches the x-axis, (ii) lies entirely inside the circle $x^2 + y^2 = 18$.



[Watch Video Solution](#)

6. Find the co-ordinates of the centre of the circle $x^2 + y^2 - 4x + 6y = 3$ Given that the point A, outside the circle, has co-ordinates (a, b) where a and b are both positive, and that the tangents drawn from A to the circle are parallel to the two axes respectively, find the values of a and b



[Watch Video Solution](#)

7. Find the equation of the Circle whose centre is at the point (4, 5) and which touches the x-axis. Also find the co-ordinates of the points at which the circle cuts the y-axis.



[Watch Video Solution](#)

8. Prove that the circles

$$x^2 + y^2 - 4x + 6y + 8 = 0 \quad \text{and}$$

$$x^2 + y^2 - 10x - 6y + 14 = 0 \quad \text{touch at the}$$

point (3,-1)





Watch Video Solution

9. Show that the circles $x^2 + y^2 + 2x = 0$ and $x^2 + y^2 - 6x - 6y + 2 = 0$ touch externally at the point $\left(\frac{1}{5}, \frac{3}{5}\right)$



Watch Video Solution

10. Show that the circles $x^2 + y^2 + 2x - 6y + 9 = 0$ and $x^2 + y^2 + 8x - 6y + 9 = 0$ touch internally.



Watch Video Solution

11. Find the equation of the circle which passes through the points $(0,0)$, $(0,1)$ and $(2,3)$



Watch Video Solution

12. Find the centre and radius of the circle which passes through lie points $(7,5)$, $(6, - 2)$, $(-1, -1)$



Watch Video Solution

13. Find the equation of the circle circumscribing the triangle formed by the lines $x + y + 1 = 0$, $3x + y - 5 = 0$, and $2x + y - 4 = 0$.



Watch Video Solution

14. Show that the circle $x^2 + y^2 - 4x + 4y + 4 = 0$ touches the coordinate axes. If the points of contact are A and B, find the equation of the circle which passes through A, B and the origin,



[Watch Video Solution](#)

15. Find the equation of the circle which passes through the points $P(1, 0)$, $Q(3, 0)$, and $R(0, 2)$. Find also (i) the coordinates of the other point in which the axis of y cuts the circle, (ii) the coordinates of the other end of the diameter through Q .



[Watch Video Solution](#)

16. Find the equation of the circle which has its centre on the line $y = 2$ and which passes through the points $(2,0)$ and $(4,0)$.



Watch Video Solution

17. Find the equation of the circle which passes through the points $(1, -2)$, $(4, -3)$ and has its centre on the line $3x + 4y + 10 = 0$.



Watch Video Solution

18. The vertices A, B, C of a triangle ABC have co-ordinates (4,4), (5,3) and (6,0) respectively. Find the equations of the perpendicular bisectors of AB and BC, the coordinates of the circumcentre and the radius of the circumcircle of the triangle ABC.



Watch Video Solution

19. The radius of a circle is 5 units and it touches the circle

$x^2 + y^2 - 2x - 4y - 20 = 0$ externally at the point (5,5). Find the equation of the circle.



[Watch Video Solution](#)

20. Find the equation of the circle which passes through the points (5,0) and (1,4) and whose centre lies on the line $x + y - 3 = 0$.



[Watch Video Solution](#)

Exercise 17 C

1. The circle $4x^2 + 4y^2 = 25$ cuts the line $3x + 4y - 10 = 0$ at A and B. Calculate the coordinates of A and B.



[Watch Video Solution](#)

2. Find the length of the chord $x + 2y = 5$ of the circle whose equation is $x^2 + y^2 = 9$. Determine also the equation of the circle described on the chord as diameter.



[Watch Video Solution](#)

3. Find the intercept made by the circle $4x^2 + 4y^2 - 24x + 5y + 25 = 0$ on the st. line $4x - 2y = 7$



[Watch Video Solution](#)

4. Find the equation of circle with Centre C (1,-3) and tangent to $2x - y - 4 = 0$.



[Watch Video Solution](#)

5. Find the length of the chord made by the axis of x , with the circle whose centre is $(0,3)$ and which touches the straight line $3x + 4y = 37$.



[Watch Video Solution](#)

6. Find the equation of the circle which has centre $C (3, 1)$ and which touches the line $5x - 12y + 10 = 0$.



[Watch Video Solution](#)

7. Tangents from an external point. Find the equations of the tangents to the circle $x^2 + y^2 = 10$ through the external point (4, -2).



[Watch Video Solution](#)

8. Find the equations of the tangents to the circle $x^2 + y^2 = 25$ inclined at an angle of 60° to the x-axis.



[Watch Video Solution](#)

9. The circle $x^2 + y^2 + 2gx + 2fy + c = 0$ does not intersect the y-axis if



[Watch Video Solution](#)

10. Find the conditions that the line

(i) $y = mx + c$ may touch the circle

$$x^2 + y^2 = a^2,$$

(ii) $y = mx + c$ may touch the circle

$$x^2 + y^2 + 2gx + 2fy + c = 0.$$



[Watch Video Solution](#)

11. For what value of k will the line $4x + 3y + k = 0$ touch the circle $2x^2 + 2y^2 = 5x$



[Watch Video Solution](#)

12. Show that $3x - 4y - 11 = 0$ is a tangent to the circle $x^2 + y^2 - 8y + 15 = 0$ and find the equation of the other tangent which is parallel to the st. line $3x = 4y$.



[Watch Video Solution](#)

13. Show that $x = 7$ and $y = 8$ touch the circle $x^2 + y^2 - 4x - 6y - 12 = 0$ and find the points of contact.



[Watch Video Solution](#)

14. Show that the line $3x+4y +20=0$ touches the circle $x^2 + y^2 = 16$ and find the point of contact



[Watch Video Solution](#)

15. Length of the tangent. Prove that the length t of the tangent from the point $P(x_1, y_1)$ to the circle

$x^2 + y^2 + 2gx + 2fy + c = 0$ is given by

$$t = \sqrt{x_1^2 + y_1^2 + 2gx_1 + 2fy_1 + c}$$

Hence, find the length of the tangent

(i) to the circle $x^2 + y^2 - 2x - 3y - 1 = 0$

from the origin, (2,5)

(ii) to the circle

$x^2 + y^2 - 6x + 18y + 4 = -0$ from the

origin

(iii) to the circle $3x^2 + 3y^2 - 7x - 6y = 12$

from the point (6, -7)

(iv) to the circle $x^2 + y^2 - 4y - 5 = 0$ from

the point (4, 5).



[Watch Video Solution](#)

16. If $x = 4 + 5\cos \theta$ and $y = 3 + 5 \sin \theta$, show that the locus of the point (x, y) as θ varies, is a circle. Find the centre and radius of the circle.



[Watch Video Solution](#)

17. A (1 ,0) and B (7 ,0) are two points on the axis o f x. A point P is taken in the first quadrant such that PAB is an isosceles triangle and $PB = 5$ units. Find the equation of the circle described on PA as diameter.



[Watch Video Solution](#)

18. Find the equation of the circle which touches the line $y = 2$, passes through the origin and the point where the curve $y^2 - 2x + 8 = 0$ meets the x-axis.



[Watch Video Solution](#)

19. (i) Prove that the line $y = 2x$ touches the circle $x^2 + y^2 + 16x + 12y - 80 = 0$ and find the co-ordinates of the point of contact.

(ii) The circle $x^2 + y^2 - 6x - 10y + p = 0$ does not intersect or touch either axis and the point $(1,4)$ is inside the circle. Calculate the range of possible values of p .



[View Text Solution](#)

Exercise 17 D

1. Find the equations of the tangent to the circle $2x^2 + 2y^2 = 5$ which are perpendicular to $y = 2x$



[Watch Video Solution](#)

2. Find the equations of the tangents to the circle $x^2 + y^2 - 8y - 8 = 0$ which are parallel to the line $5x - 2y = 2$.



[Watch Video Solution](#)

3. Find the equation of the circle which has extremities of a diameter the origin and the point $(2, -4)$. Find also the equations of the tangents to the circle which are parallel to this diameter



[Watch Video Solution](#)

4. Show that, whatever be the value of a , the lines $x \cos a + y \sin ct = a$ and $x \sin ct - y \cos a =$

a are tangents to the circle $x^2 + y^2 = -a^2$.

Hence obtain the locus of the points from which perpendicular tangents can be drawn to the circle $x^2 + y^2 = a^2$



[View Text Solution](#)

5. Find the locus of the feet of the perpendiculars drawn from the point $(b, 0)$ on tangents to the circle $x^2 + y^2 = a^2$



[Watch Video Solution](#)

6. (i) Find the equation of that chord of the circle $x^2 + y^2 = 15$, which is bisected at the point (3,2).

(ii) Find the locus of mid-points of all chords of the circle $x^2 + y^2 = 15$ that pass through the point (3,4),



[Watch Video Solution](#)

7. Find the locus of the middle points of the chords of the circle $x^2 + y^2 = 4(y + 1)$ drawn through the origin.



Watch Video Solution

Chapter Test

1. Find the centre and radius of the circle

$$2x^2 + 2y^2 - x = 0$$



Watch Video Solution

2. Find the equation of the circle with centre (-

a, -b) and radius $\sqrt{a^2 - b^2}$.



[Watch Video Solution](#)

3. Find the equation of the circle drawn on the line joining $(-1,2)$ and $(3, -4)$ as diameter.



[Watch Video Solution](#)

4. Find the equation of the circle passing through the points $(4,1)$ and $(6,5)$ and whose centre lies on the line $4x + y = 16$.



[Watch Video Solution](#)

5. Find the equation of a circle of radius 5 units whose centre lies on x-axis and passes through the point (2, 3).



[Watch Video Solution](#)

6. Find the equation of the circle concentric with the circle $x^2 + y^2 - 8x + 6y - 5 = 0$ and passing through the point (-2, -7).



[Watch Video Solution](#)

7. Find the equation of the circle through the points $(0,0)$, $(2,0)$ and $(0,4)$. Also find the coordinates of its centre and its radius.



[Watch Video Solution](#)

8. Find the parametric representation of the circle $x^2 + y^2 - 2x - 4y - 4 = 0$



[Watch Video Solution](#)

9. Find the length of the chord intercepted by the circle $x^2 + y^2 = 25$ on the line $2x - y + 5 = 0$



[Watch Video Solution](#)

10. Find the equations of the tangents to the circle $x^2 + y^2 = 9$, which are parallel to the line $3x + 4y = 0$



[Watch Video Solution](#)

11. Find the equation of the circle which touches the y -axis at a distance of $+4$ from the origin and cuts off an intercept 6 from the x -axis.



Watch Video Solution