MAT 141

Questions:

1. What is the equation of a line passing through the point (-1, 2) and parallel to the line 2x+3y+1=0. (a) 2x+3y=4 (b) 3x+2y=6 (c) 2x+4y=3 (d) 3x+4y=2.
2. The center of the triangle formed by the line x-y=5, 2x-y=8 and 3x-y=9 is? (a) (6, 1) (b) (5, 1) (c) (-6, 1) (d) (-5, 1).
3. Find the equation of the line which makes an angle 45° with the x-axis and cut y-axis at a distance of 3 units above the origin. (a) y=x-s (b) y=x+3 (c) y=2x-3 (d) y=4x+3.
4. The intercepts that the 3x-2y-6=0 make on axis is? (a) x/2+y/3=1(b) x/2-y/3=1 (c) x/3-y/2=1 (d) x/3+y/5=-1.
5. In what ratio is the line joining (-1, 1) and (5, 7) divided by the line x+y-4=0? (a) 2:5 (b) 1:2 (c) -1:2 (d) 2:5.
6. The equation of the line joining two circles is $x^2+y^2-2x+4y-1=0$ and $x^2+y^2+2x-4y=-1$ is (a) y+2x=0 (b) y-2x=0 (c) 2y-x=0 (d) 2y+x=0.
7. The co-ordinate of a point where the line y=2x+1 cuts the circles $x^2+y^2=2$ is? (a) (1, 1) & (1/5, 7/5) (b) (-1, 2) & (2/5, 1/7) (c) (1, -2) & (1/5, 7/5) (d) (1, -1) & (2, 3).
8. What is the length of the tangent drawn from the point (2, -1) to the circle $3x^2+3y^2+4x+2y+6=0$? (a) 2 (b) 3 (c) 4 (d) 5.
9. Find the point where the line x-y=0 meets the circle $x^2+y^2+2x+y=-1$. (a)(-1, -1), (-2, -2) (b) (1,1), (2, 2) (c) (1, 2), (2, 1) (d) (-1, -2), (-2, -1).
10. The equation of the circle which touches the line x=0, y=0 and x=k is? (a) $4x^2+4y^2-4kx\pm4ky+k2=0$ (b) $x^2+y^2+2fx+2gy+c=0$ (c) $x^2+y^2=k^2$ (d) $x^2+y^2+x+y=2$.
11. What is the equation of a circle circumscribing the triangle formed by the line x=6, x+2y=0 and x-2y=8. (a) $2x^2+2y^2-21x+8y+60=0$ (b) $x^2+y^2-x+8y+6=0$ (c) $x^2+y^2+x+y+6=0$ (d) $2x^2+2y^2+21x+8y-6=0$.
12. The tangent to the circle x2+y2=25 from the point (11, -2) is? (a) 3x+4y-25=0, 7x-24y-125=0 (b) 3x-2y-5=0, x-24y-5=0 (c) 2x-3y+5=0
13. What is the equation of the chord of the circle $x^2+y^2=16$ whose middle point is (3, 2)?
    (a) 3x+2y=13 (b) x+y=3 (c) 3x+2y=1 (d) x-y=1.
14. When does the line 3x+4y+7=0 cuts the circle $x^2+y^2-4x-6y-12=0$? (a) (-1,-1) (b) (-1, 2) (c) (1, -2) (d) (-1, -1).
15. The point of interception of the line y-5x-2=0 and the circle $x^2+y^2-13x-4y=0$ is? (a) (1, 7), (-1/3, -1/2) (b) (1, 2), (-1, -2) (c) (1, 6), (1/3, ½) (d) (-1,-2).
16. Find the equations of the tangent to the circle $x^2+y^2=4$, which are parallel to the line x+2y+3=0. (a) $2y+x=\pm5^{1/2}$ (b) x-y=±5 (c) 3y+x=±3 (d) $2y-3x=\pm5^{1/2}$.
17. The equation of length and normal at the point (2, 1) on the circle $x^2+y^2+116x+48y-285=0$ is? (a) 12x+5y-29=0, 12y-5x-2=0 (b) x+y-2=0, x-y+2=0 (c) x+4y=1, x+y=1 (d) x-5y=0, x+2y=1.
18. Find the equation for the circle(s) of radius 5 that contains the point (1, 2) and (-1, -2). (a) $(x-4)^2+(y+2)^2=25$ (b) $(x-4)^2+(y+2)^2=25$ and $(x+2)^2+(y-1)^2=50$ (c) $(x+y)^2+(y-2)^2=25$ (d) $(x+y)^2+(y-2)^2=25$ and $(x-4)^2+(y+2)^2=25$.
19. The center and radius of the circle $4x^2+4y^2-12x+5=0$ is. (a) (2/3, 0) (b) (2/3, 1) (c) (3/2, 0) (d) (3/2, 1).
20. Obtain the intercept from the equation 5x-4y-20=0. (a) x/5+y/4=1 (b) x/5-y/4=1 (c) x/4-y/5=1 (d) x/4+y/5=1.

21. The point of interception of the line $3x+2y-1=0$ and $2x-3y+21=0$ is? (a) (3, 5) (b) (5, 3) (c) (-5, 3) (d) (-3, 5).
22. The gradient of $x+2y=0$ is? (a) ¼ (b) -1/4 (c) -1/2 (d) 1/2.
23. The radius of the circle $x^2+y^2+6x-8y-24=0$ is? (a) 7 (b) 9 (c) 24 (d) $124^{1/2}$.
24. Find the center of a circle $4x^2+4y^2-2x+5=0$. (a) (2/3, 0) (b) (3/2, 0) (c) (1/2, 0) (d) (1/3, 0).
25. The coordinate of the foot of the perpendicular from the point (2, 3) on the line $x+y-11=0$ is? (a) (1, 6) (b) (0, 1) (c) (1, 0) (d) (-1, 5).
26. What is the value of "k" such that the three lines $3x+y-2=0$, $kx+2y-1=0$ and $2x-y-3=0$ meet in a point (a) 1 (b) 2 (c) 3 (d) 4.
27. Find the coordinate of the foot of the perpendicular from the point (2, 3) on the line $y-3x-4=0$. (a) (-1/10, 37/10) (b) (1/10, 3/10) (c) (1, 3) (d) (-1/10, -7/10).
28. If the vertices of a triangle ABC are A (0, 0), B (1, 5) and C (-2, 2). Find the equation of altitude through A. (a) $x-y=0$ (b) $x+y=0$ (c) $2x+y=0$ (d) $2y+x=0$.
29. The equation of the circle center (-2, -1) with radius 6 is. (a) $x^2+y^2+4x+2y-1$ (b) $x^2+y^2+4x+2y-31$ (c) $x^2+y^2+4x+4y-1$ (d) $x^2+y^2-4x-2y-1$.
30. Find the radius and the center of the circle $4x^2+4y^2-12x+28y+42=0$. (a) (12, -28) & 5 b) (3/2, -7/2) & 2 (c) (-3/2, 7/2) & 2 (d) (-3, -7) & $2^{1/2}$.
31. The equation of the circle with center (3, 2) and radius 5 is. (a) $X^2+y^2=50$ (b) $x^2+y^2-6x-4y-12=0$ (c) $x^2+y^2-12=0$ (d) $x^2+y^2+10y+16=0$.
32. Find the center and radius of the circle $4x^2+4y^2-12x+28y+42=0$. (a) (3/2, 7/2) & 2 (b) (-3/2, -7/2) & 4 (c) (-6, -14) & 42 (d) (-3, 6) & 2.
33. Find the equation of the circle tangent to the line $5x-12y+30=0$ and touches the line $y=0$ at the point (4, 0). (a) $(x-4)^2+y^2$ (b) $13x^2+13y^2-109x-12y+178=0$ (c) $x^2+y^2+109x+12y+170=0$ (d) $(x-1)^2+(y-3)^2=0$.
34. Find the equation of the circle whose center is (1, 3) and which touches the line $8x+15y-2=0$. (a) $x^2+y^2-2x-6y+1=0$ (b) $x^2+y^2+2x+6y+1=0$ (c) $(x-1)^2+(y-3)^2=0$ (d) $x^2+y^2-2x+6y-1=0$.
35. Obtain the equations of the center whose passes through parts (4, 8) and whose radius are 5 units each.
36. Find the equation of a circle which passes through the point (1, 3), (2, -1) and (-1, 1). (a) $5x^2+5y^2-11x-9y-12=0$ (b) $x^2+y^2-2x+4y-1=0$ (c) $x^2+y^2+11/5x+9/5y+12/5=0$ (d) $x^2+y^2-11x-9y+10=0$.
37. Find the equation of the line joining the center of two circles $x^2+y^2-2x+4y-1=0$ and $x^2+y^2+2x-4y+1=0$. (a) $2x+y=0$ (b) $2x-y=0$ (c) $x+y=0$ (d) $x-y=0$.