1. What is the center and the radius of the equation $(x-3)^2+(y+2)^2=4$?

A) C(3 ,2) and r =4 B) C(-3 ,2) and r =2
C) C(3,-2) and r =2 D) C(-3 ,2) and r =2
E) C(3 ,-2) and r =4

2. Which one of the followings is the center C and the radius r of the circle $4x^2+4y^2-8x+24y=81$?

A) C(4,-12) ; r = 9 B) C(1,-3) ; r = 9
C) C(1,-3) ; $r=\frac{11}{2}$ D) C(1,-3) ; r = 11
E) C(1,-3) ; $r=\frac{9}{2}$

3. The points A(-2,1) and B(2,5) are given. Which one of the followings is the equation of the circle, with diameter [AB] ?

A) $x^2+(y+3)^2=2\sqrt{2}$
B) $(x-3)^2+y^2=8$
C) $x^2+(y-3)^2=8$
D) $(x+3)^2+y^2=2\sqrt{2}$
E) $x^2+y^2=8$

4. What is the radius of the equation $x^2+y^2-2x-4y-4=0$?

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

5. Where does the circle $(x-3)^2+(y+2)^2=4$ cut the x –axis ?

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

6. If the circle $x^2+y^2-2x+y-a+3=0$ is tangent to y = 1, then what is a?

A) -1 B) 4 C) 5 D) 6 E) 8

7. If the circle given by the equation $x^2+y^2-6x+8y+k=0$ is tangent to x-axis, then what is the value of k?

A) 6 B) 8 C) 9 D) 12 E) 16

8. Find the equation of the circle, whose center is on the point C(-2,-3) and is tangent to the y-axis.

A) $x^2+y^2+6x+4y+9=0$
B) $x^2+y^2+6x-4y-9=0$
C) $x^2+y^2+4x+6y+9=0$
D) $x^2+y^2-4x-6y+9=0$
E) $x^2+y^2+4x+6y-9=0$

9. If the circle $x^2+y^2-2x+4y+m=0$ is tangent to the line $x=-3$, find m.

A) 4 B) 11 C) –4 D) –8 E) –11

10. The center of a circle is on the point C(2,3) and it's radius is 5. Find the abscissa values of the intersection points of the circle by the x-axis.

A) –4,4 B) –1,7 C) –2,6 D) –3,5 E) –5,3

11. What is the equation of the tangent line that is tangent to the circle $(x-1)^2+(y+1)^2=8$ at the point A(-1,1) ?

A) y =x B) y =2x-3 C) y =2x+2
D) y =3x E) y =x+2

12. Find y-value of the point that lies on the circle $(x-2)^2+(y+1)^2=25$ and is nearest to the point $P(10,5)$.

A) 2 B) 3 C) 4 D) 5 E) 10

13. Find the equation of the line that is tangent to the circle $(x-2)^2+(y-3)^2=r^2$ at the point A(1,2).

A) $x+y+3=0$ B) $-x+y+3=0$
C) $2x-y+3=0$ D) $2x+y-4=0$
E) $x+y-3=0$

14. Which one of the followings is the equation of the line that is tangent to the circle $x^2+y^2-8x+2y-8=0$ at the point A(1,3)?

A) $3x+4y-15=0$ B) $4x+3y-13=0$
C) $3x-4y+9=0$ D) $3x-5y+12=0$
E) $4x+5y-10=0$

15. Which one of the followings is the radius of the circle that passes through the points A(0,1) and B(1,-3) and whose center is on the line $y=x-3$?

A) $\sqrt{17}$ B) $\frac{\sqrt{34}}{2}$ C) 2 D) 3 E) $\frac{7}{2}$

16. Let B be the nearest point of the circle $x^2+y^2-4x+6y-3=0$ to the point A(-4,5). What is |AB|?

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

17. If the circles $x^2+(y-6)^2=r^2$ and $(x-8)^2+y^2=25$ are internally tangent, then find r.

A) 5 B) 10 C) 15 D) 20 E) 25

18. What is the shortest chord passing through A(1,1) for the circle $x^2+y^2+x-y-11=0$?

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

19. The line $2x-y+2=0$ intersect the circle $x^2+y^2=16$ at the points A and B. The perpendicular line segment drawn from the center of the circle to the line AB intersect it at the point H. Find the y-value of H.

A) $\frac{4}{5}$ B) $\frac{7}{10}$ C) $\frac{3}{5}$ D) $\frac{1}{2}$ E) $\frac{2}{5}$

20. Inside the circle $x^2+y^2=625$, the chords with length 48-cm are drawn. Which one of the followings is the geometric place of the midpoints of the chords?

A) $x^2+y^2=25$ B) $x^2+y^2=169$
C) $x^2+y^2=576$ D) $x^2+y^2=49$
E) $x^2+y^2=144$