Unit 6: Conic Section

Pair of Lines & Circles

1) The intersection of a cone with a plane gives

A) Point
B) Line
C) Conic Section
D) Two points

2) The conic sections are described today by

A) Linear Equation
B) Bi-Quadratic equations
C) Quadratic equations
D) Cubic equations

3) The standard conic section are

A) Circle
B) Parabola
C) Ellipse / hyperbola
D) All A, B, C are true

4) The degenerate conic sections are

A) a point
B) two coincident lines
C) a pair of lines
D) All A, B, C are true

5) The equation $3x^2 - 4xy + 5y^2 = 0$ is called

A) Quadratic
B) Linear
C) Explicit
D) Homogeneous

6) The two lines represented by the equation $8x^2 + 41xy - 8y^2 = 0$ are

A) Parallel
B) Non Parallel
C) Perpendicular
D) Coincident

7) If the two lines represented by the equation $ax^2 + 2hxy + by^2 = 0$ are perpendicular then,

A) $a = b$
B) $h = ab$
C) $a + b = 0$
D) $h = a + b$

8) The angle between the pair of lines represented by , $3x^2 - 4xy - 3y^2 = 0$ is

A) $\pi/2$
B) $\pi/3$
C) $\pi/4$
D) $\pi/6$

9) The pair of lines represented by $y^2 - 36 = 0$ are

A) Parallel
B) Perpendicular
C) Non parallel
D) Coincident

10) The center of the circle represented by the equation $(x - 1)^2 + (y - 2)^2 = 4$ is

A) (0, 0)
B) (1, 1)
C) (1, 2)
D) (1, - 2)

11) The radius of the circle, represented by the equation $x^2 + 2x + 1 + y^2 + 4y + 4 = 16$ is

A) 16
B) 8
C) 11
D) 4

12) The length of the diameter of the circle represented by the equation $2x^2 + 2y^2 – 8 = 0$, is

A) 8
B) 4
C) 2
D) 16

13) The length of the chord of the circle defined by $x^2 + 4x + 4 + y^2 + 6y + 9 = 9$, passing through the center is

A) 9
B) 3
C) 6
D) 4

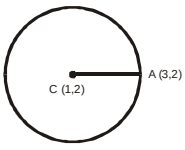
14) The circumference of the circle represented by $x^2 + 2x + 1 + y^2 + 2y + 1 = 25$ is

A) 2π
B) 25π
C) 10π
D) 5π

15) The length of the chord of the circle $x^2 – 2x + 1 + y^2 – 6y + 9 = 9$ passing through the point (1, 3) is
A) 9
B) 6
C) 3
D) 18

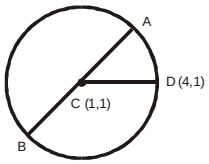
16) If length of a chord of the circle $x^2 – 2x + 1 + y^2 + 2y + 1 = 25$ is 10, then it will pass through the point
A) (-1, 1)
B) (1, -1)
C) (1, 5)
D) (5, 1)

17) The equation of the circle given in the figure is



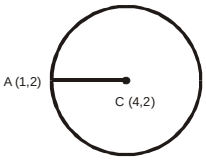
A) $(x + 1)^2 + (y + 2)^2 = 4$
B) $(x - 1)^2 + (y - 2)^2 = 9$
C) $(x - 1)^2 + (y - 2)^2 = 2$
D) $(x - 1)^2 + (y - 2)^2 = 4$

18) In the figure the length of the chord AB is



A) 4
B) 5
C) 6
D) 8

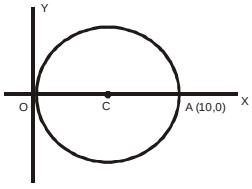
19) The circumference of the circle given in the figure is



A) 6π
B) 4π
C) 2π
D) 8π

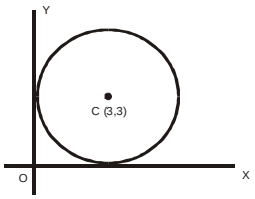
20) If a point P is outside the circle then from this point we can draw
A) one tangent to the circle
B) two tangents to the circle
C) three tangents to the circle
D) no tangent to the circle

21) the equation of the circle given in the figure is



A) $x^2 + y^2 = 10$
B) $(x – 5)^2 + y^2 = 25$
C) $(x + 5)^2 + y^2 = 25$
D) $x^2 + (y - 5)^2 = 25$

22) The circumference of the circle given in the figure is



A) 6π
B) 9π
C) 3π
D) 12π

23) If $g^2 + f^2 - c = 0$ then the circle reduces to

A) a line
B) a point
C) two points
D) none of these

24) In the equation of a circle the coefficient of x^2 and y^2 are

A) Positive
B) Negative
C) Equal
D) Unequal

25) The equation of a circle is an equation of

A) Second degree in x
B) Second degree in y
C) First degree in x and y
D) Second degree in x and y

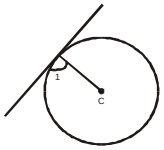
26) In the equation of a circle there is no term involving

A) x
B) y
C) xy
D) x^2

27) The equation $3x^2 + 3y^2 - 213x + 97y + 329 = 0$ represents a

A) Line
B) Circle
C) Ellipse
D) Parabola

28) In the figure the measure of $\angle 1$ is



A) 45^o
B) 60^o
C) 90^o
D) 120^o

29) The equation of the tangent to the circle $x^2 + y^2 = 8$ at the point (2, 2) is

A) $2x + y = 8$
B) $x - y = 4$
C) $x + y = 2$
D) $2x + y = 4$

30) If $x^2 + y^2 = 4$ represents a circle then the point (-2, 0) lies

A) Inside the circle
B) Outside the circle
C) On the circle
D) None of these

31) If a body is moving with a uniform angular speed around a circular path then the linear velocity of the body is directed along

A) The circular path
B) The normal to the path
C) The tangent to the path
D) None of these

Parabola, Ellipse and Hyperbola

1) If the conic is a parabola then the value of eccentricity is

A) 0
B) 1
C) less than 1
D) greater than 1

2) If e = 1 then the conic is a

A) Circle
B) Parabola
C) Ellipse
D) Hyperbola

3) If $e < 1$ then the conic is

A) a circle
B) a parabola
C) an ellipse
D) a hyperbola

4) If $e > 1$ then the conic is

A) a circle
B) a parabola
C) an ellipse
D) a hyperbola

5) Locus of points in a plane, the distance of each of which from a fixed point is equal to its distance from a fixed straight line in the plane is called

A) a circle
B) a parabola
C) an ellipse
D) a hyperbola

6) Locus of points in a plane, the distance of each of which from a fixed point is less than its distance from a fixed line in the plane is called

A) a circle
B) a parabola
C) an ellipse
D) a hyperbola

7) Locus of points in a plane, the distance of each of which from a fixed point is greater than its distance from a fixed line in the plane is called

A) a circle
B) a parabola
C) an ellipse
D) a hyperbola

8) the vertex of the parabola $y^2 = -8x$ is

A) (-2, 0)
B) (2, 0)
C) (0, 0)
D) (0, -2)

9) The axis of the parabola $x^2 = -4y$ is

A) x-axis
B) y-axis
C) x and y-axis
D) none of these

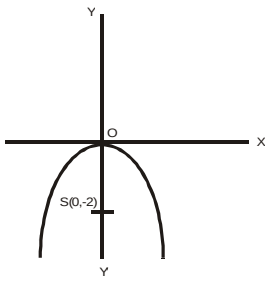
10) The equation of the axis of the parabola $y^2 = 16x$ is

A) $x - y = 0$
B) $x + y = 0$
C) $x = 0$
D) $y = 0$

11) The equation of the latus rectum of the parabola $y^2 = -16x$ is

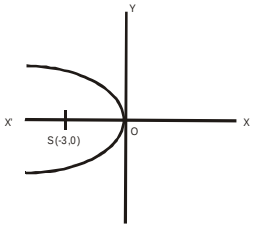
A) $x = 4$
B) $y = -4$
C) $y - 4 = 0$
D) $x + 4 = 0$

12) the equation of the parabola given in the figure is



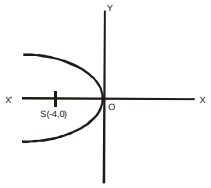
A) $x^2 + 8y = 0$
B) $y^2 = -8x$
C) $y^2 = 8y$
D) $x^2 = 8y$

13) the length of the latus rectum of the parabola given in the figure is



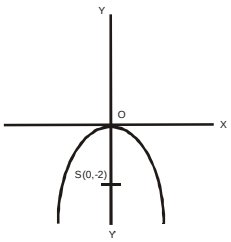
A) 3
B) – 12
C) 6
D) 12

14) The equation of the parabola given in the figure is



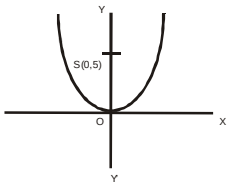
A) $x^2 = -16y$
B) $x^2 = 16y$
C) $y^2 = -16x$
D) $y^2 = 16x$

15) The length of the latus rectum of parabola given in the figure is



A) 4
B) 8
C) 2
D) –8

16) the equation of the latus rectum of the parabola given in the figure is



A) x = 5
B) y –5 = 0
C) x = -5
D) y = -5

17) The coordinates of the focus of the parabola $(x – 3)^2 = 4(y – 2)$ is

A) (0, 3)
B) (0, 2)
C) (3, 3)
D) (3, 2)

18) The coordinates of the vertex of the parabola $(x – 5)^2 = 4(y – 4)$ is

A) (0, 5)
B) (0, 4)
C) (4, 5)
D) (5, 4)

19) The equation of the axis of the parabola $(x – 3)^2 = 2(y + 4)$ is
A) x = -3
B) x – 3 = 0
C) y + 4 = 0
D) y = 4

20) The equation of the Directrix of the parabola $(x – 3)^2 = 4(y – 2)$ is

A) x = 1
B) y = 2
C) y – 1= 0
D) y = -1

21) The equation of the latus rectum of the parabola $(x +1)^2 = 4(y – 2)$ is

A) y – 3 = 0
B) y = -3
C) x = 3
D) x = -3

22) the equation of the tangent at the vertex of the parabola $(x + 3)^2 = 4(y – 2)$ is

A) x = -3
B) y = 0
C) y – 2 = 0
D) y = -2

23) The coordinates of the vertex of the parabola $(y – 3)^2 = 4(x – 1)$ is

A) (0, 0)
B) (3, 1)
C) (1, 3)
D) (-3, -1)

24) The equation of the circle whose diameter is the latus rectum of the parabola $x^2 = 4y$ is

A) $(x-2)^2 + (y-1)^2 = 4$
B) $x^2 + (y-1)^2 = 2$
C) $x^2 + (y+1)^2 = 4$
D) $x^2 + (y-1)^2 = 4$

25) In the ellipse $\frac{x^2}{4} + \frac{y^2}{9} = 1$ the length of the major axis is

A) 3
B) 2
C) 6
D) 9

26) In the ellipse $\frac{x^2}{9} + \frac{y^2}{16} = 1$ the length of minor axis is

A) 3
B) 6
C) 9
D) 4

27) In an ellipse the mid point C of the major axis is called
A) The center of the ellipse
B) Focus of the ellipse
C) Vertex of the ellipse
D) Second focus

28) The curve of the parabola $y^2 = 4ax$ is symmetrical with respect to
A) Origin
B) X-axis
C) Y-axis
D) Both the axis

29) The curve of the ellipse $\frac{x^2}{9} + \frac{y^2}{4} = 1$ is symmetrical about

A) the x-axis
B) the y –axis
C) the origin
D) all A, B, C are true

30) In the ellipse $\frac{x^2}{8} + \frac{y^2}{6} = 1$, the value of eccentricity is

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

31) If one of the foci of an ellipse is S(1, 0), then the distance between the two foci is (center of the ellipse lies at the origin)

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

****

Written by NAUMAN IDREES
(nomi255@yahoo.com)
FSc (Session: 2007-09)
ICMS College System Hayatabad, Peshawar