

10. A circle whose equation is $x^2 + y^2 - 6x - 4y - 12 = 0$ has a diameter of
- 7
 - 10
 - 12
 - 14
11. What is the distance between the center of the circles $x^2 + y^2 + 2x + 4y - 3 = 0$ and $x^2 + y^2 - 8x - 6y + 7 = 0$?
- 7.07
 - 7.77
 - 8.07
 - 8.77
12. Find the radical axis of the circle $x^2 + y^2 + 8x - 6y = 0$ and the circle $x^2 + y^2 - 12x - 16y + 20 = 0$.
- $2x + y = 2$
 - $2x - y = 2$
 - $x + 2y = 2$
 - $x - 2y = 2$
13. The ratio of the distance between the foci to the distance between the vertices in either hyperbola or ellipse.
- eccentricity
 - variance
 - latus rectum
 - deviation
14. Find the equation of the directrix of the parabola $(y-2)^2 = -8(x-1)$.
- $x = -3$
 - $x = 3$
 - $Y = 3$
 - $Y = -3$
15. A parabola has its focus at $(7, -4)$ and directrix $Y = 2$. Find the equation.
- $X^2 + 12X - 14Y + 61 = 0$
 - $X^2 + 14X - 12Y + 61 = 0$
 - $X^2 - 12X + 14Y + 61 = 0$
 - $X^2 - 14X + 12Y + 61 = 0$
16. Find the axis of symmetry of the function $y = 2x^2 - 7x + 5$.
- $4x - 7 = 0$
 - $7x - 4 = 0$
 - $4x + 7 = 0$
 - $7x + 4 = 0$
17. An arch 18 m high has a form of parabola with a vertical axis. The length of the horizontal beam placed across the arch 8 m from the top is 64 m. Find the width of the bottom.
- 76 m
 - 86 m
 - 96 m
 - 106 m
18. Find the length of the latus rectum of the parabola whose equation is $y^2 = 20(x+6)$.
- 6
 - 10
 - 20
 - 12
19. The equation $25X^2 + 16Y^2 - 150X + 128Y + 81 = 0$ has its center at
- $(3,-4)$
 - $(3,4)$
 - $(-4,3)$
 - $(4,3)$
20. The major axis of the elliptical path in which the earth moves around the sun is approximately 186,000,000 miles and the eccentricity of the ellipse is $1/60$. Determine the apogee of the earth.
- 93,000,000 miles
 - 91,450,000 miles
 - 94,335,100 miles
 - 94,550,000 miles
21. The arch of an underpass is a semi-ellipse 60 ft wide and 20 ft high. Find the clearance at the edge of a lane if the edge is 20 ft from the middle.
- 11.91 ft
 - 13.91 ft
 - 12.91 ft
 - 14.91 ft
22. Find the coordinates of the center of the curve whose equation is $16x^2 - 25y^2 + 160x - 200y + 400 = 0$.
- $(-5,-4)$
 - $(5,4)$
 - $(4,5)$
 - $(-4,-5)$

