Conic Section Test: Part 2 **Mr.Smith**

9nfxxc5c

Name: _____ **Date:** _____

1 The graph of the equation $2x^2 + y^2 - 12x - 19 = 0$ is a(n): 1 _____

A. ellipse B. circle C. parabola D. hyperbola

2 The equation $4x^2 - 24x + 4y^2 + 72y = 76$ is equivalent to 2 _____

A. $4(x-3)^2 + 4(y+9)^2 = 76$ B. $4(x-3)^2 + 4(y+9)^2 = 121$

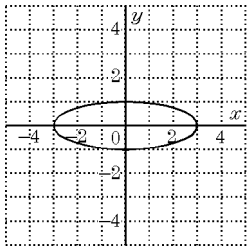
C. $4(x-3)^2 + 4(y+9)^2 = 166$ D. $4(x-3)^2 + 4(y+9)^2 = 436$

3 A parabola has its focus at $(1, 2)$ and its directrix is $y = -2$. The equation of this parabola could be 3 _____

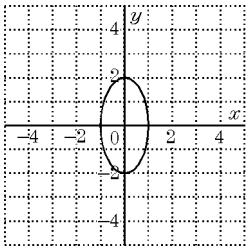
A. $y = 8(x+1)^2$ B. $y = \frac{1}{8}(x+1)^2$ C. $y = 8(x-1)^2$ D. $y = \frac{1}{8}(x-1)^2$

4 Which graph represents the relation $\frac{x^2}{16} + \frac{y^2}{4} = 1$? 4 _____

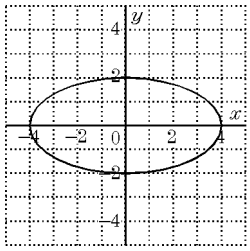
A.



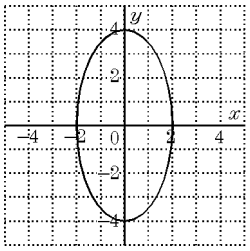
B.



C.



D.



5 Write $9x^2 + 4y^2 - 54x + 16y + 61 = 0$ in standard form. 5 _____

A. $\frac{(x-3)^2}{4} + \frac{(y+2)^2}{9} = 1$

B. $\frac{(x+3)^2}{4} + \frac{(y+2)^2}{9} = 1$

C. $\frac{(x-3)^2}{4} + \frac{(y+2)^2}{9} = -1$

D. $\frac{(x-3)^2}{4} + \frac{(y-2)^2}{9} = 1$

6 An ellipse has center $(0, 0)$ and vertices on the y-axis. The minor axis has length 10 and the major axis has length 14. Find the equation of the ellipse. 6 _____

A. $\frac{x^2}{7} + \frac{y^2}{5} = 1$ B. $\frac{x^2}{25} + \frac{y^2}{49} = 1$ C. $\frac{x^2}{49} + \frac{y^2}{25} = 1$ D. $\frac{x^2}{100} + \frac{y^2}{196} = 1$

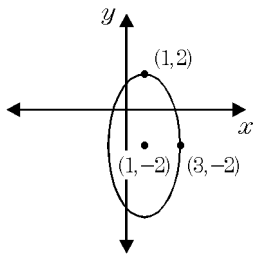
7 What is the equation of the given ellipse? 7 _____

A. $\frac{(x-1)^2}{4} + \frac{(y+2)^2}{16} = 1$

B. $\frac{(x+1)^2}{4} + \frac{(y+2)^2}{16} = 1$

C. $\frac{(x+1)^2}{4} + \frac{(y-2)^2}{16} = 1$

D. $\frac{(x-1)^2}{2} + \frac{(y+2)^2}{4} = 1$



8 Which equation represents an ellipse? 8 _____

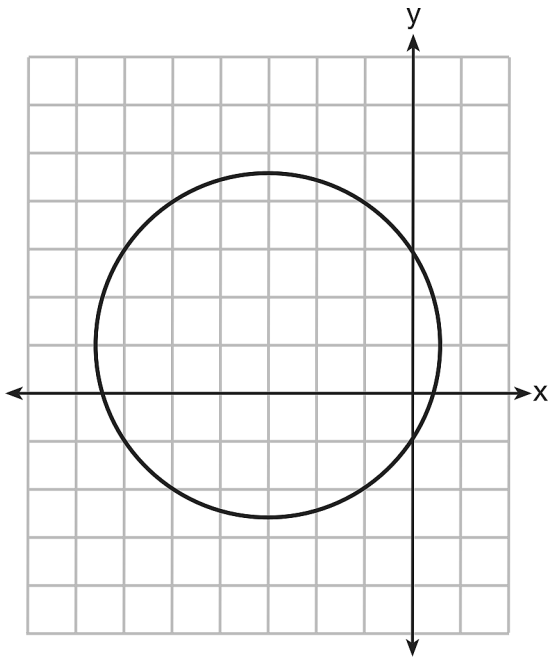
A. $x^2 + y^2 - 6x + 2y + 9 = 0$

B. $2x^2 - 3y^2 - 8x + 6y + 11 = 0$

C. $2x^2 - 3y^2 - 8x + 6y - 9 = 0$

D. $2x^2 + 3y^2 - 8x - 6y + 5 = 0$

9 Which equation is represented by the graph below? 9 _____



A. $(x-3)^2+(y+1)^2=5$ B. $(x+3)^2+(y-1)^2=5$

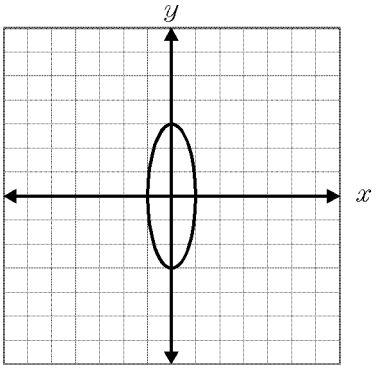
C. $(x-1)^2+(y+3)^2=13$ D. $(x+3)^2+(y-1)^2=13$

10 What are the center and radius of the circle whose equation is $x^2+y^2+4x=5$? 10 _____

A. $(2,0)$ and 1 B. $(-2,0)$ and 1 C. $(2,0)$ and 3 D. $(-2,0)$ and 3

11 The ellipse shown below is represented by this equation: 11 _____

$$\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$$



Which of the following statements *must* be true?

I. $a > b$

II. $a < b$

III. $h < 0$ and $k > 0$

IV. $h > 0$ and $k < 0$

V. $h = 0$ and $k = 0$

A. I only B. I and V C. II and IV D. II and V

12 Which equation represents a parabola with the focus at $(0, -1)$ and the directrix $y = 1$? 12 _____

A. $x^2 = -8y$ B. $x^2 = -4y$ C. $x^2 = 8y$ D. $x^2 = 4y$

13 The directrix of the parabola $12(y + 3) = (x - 4)^2$ has the equation $y = -6$. Find the coordinates of the focus of the parabola. 13 _____

A. (0,4) B. (4,0) C. (-4,12) D. (12,-4)

14 Which equation represents a circle? 14 _____

A. $6x^2 + 6y^2 - 18 = 0$ B. $x^2 - 3y^2 + 5 = 0$

C. $6x^2 + 12y^2 - 18 = 0$ D. $x = -4y^2$

15 What is the equation of the circle passing through the point $(-5, -2)$ whose center is at $(-2, 3)$? 15 _____

A. $(x+5)^2 + (y+2)^2 = 34$ B. $(x+5)^2 + (y+2)^2 = 50$

C. $(x+2)^2 + (y-3)^2 = 34$ D. $(x+2)^2 + (y-3)^2 = 50$

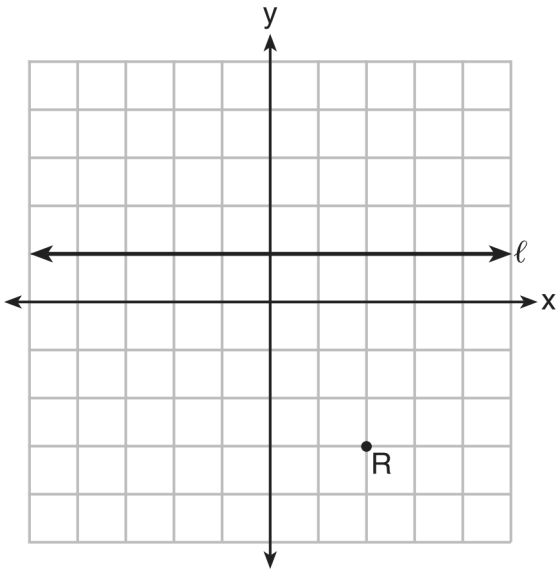
16 Find the standard form of this ellipse by completing the square: 16 _____

$4x^2 - 8x + 3y^2 + 24y = -4$

What is the center for this ellipse?

A. $(16, 144)$ B. $(1, -4)$ C. $(4, -12)$ D. $(12, 16)$

17 Which equation represents the set of points equidistant from line l and point R shown on the graph below? 17 _____



A. $y = -\frac{1}{8}(x+2)^2 + 1$ B. $y = -\frac{1}{8}(x+2)^2 - 1$

C. $y = -\frac{1}{8}(x-2)^2 + 1$ D. $y = -\frac{1}{8}(x-2)^2 - 1$

18 Identify the graph of the conic section: 18 _____

$x^2 - y^2 - 6x - 4y - 4 = 0$

A. circle B. parabola C. hyperbola D. ellipse

19 Which equation represents a circle with its center at $(2, -3)$ and that passes through the point $(6, 2)$? 19 _____

A. $(x-2)^2 + (y+3)^2 = \sqrt{41}$ B. $(x+2)^2 + (y-3)^2 = \sqrt{41}$

C. $(x-2)^2 + (y+3)^2 = 41$ D. $(x+2)^2 + (y-3)^2 = 41$

20 First write the equation in standard form, then identify the graph of the conic section: 20 _____

$x^2 + y^2 + 4x + -6y = -9$

A. $(x+2)^2 + (y-3)^2 = 1$, circle B. $(x+2)^2 + (y-3)^2 = 4$, circle

C. $(x+2)^2 - (y+3)^2 = 1$, hyperbola D. $(x-2)^2 - (y+3)^2 = 4$, hyperbola