GSE PreCalculus: Unit 2 – Conics
Test 2 Review

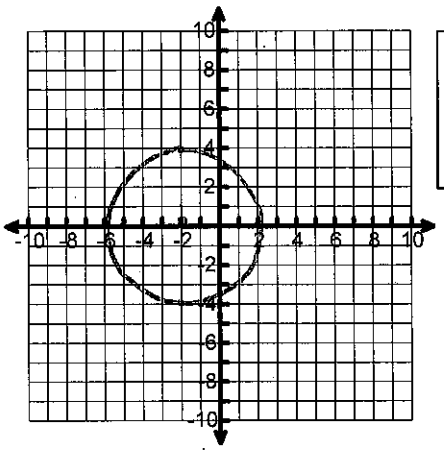
Name Key
Date _____ Period _____

Identify each type of conic.

1. $\frac{(x+3)^2}{12} - \frac{(y-4)^2}{12} = 1$ Hyperbola
2. $x^2 + y^2 = 9$ Circle
3. $y^2 - 2y - 4x - 7 = 0$ parabola
4. $7x^2 - 42x - 2y^2 + 8y - 27 = 0$ hyperbola
5. $9x^2 + 18x + 25y^2 - 10y + 38 = 0$ ellipse

$\frac{(x-3)^2}{11.7} - \frac{(y-2)^2}{41} = 1$

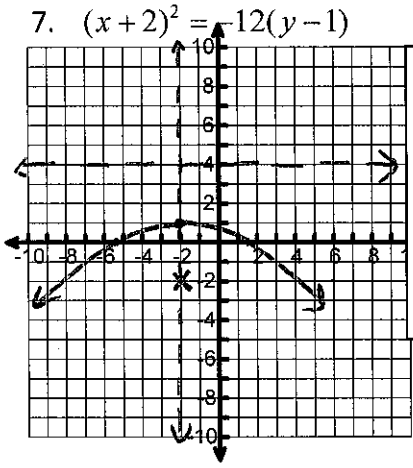
6. Graph the circle: $(x+2)^2 + y^2 = 16$



Center: $(-2,0)$
Radius: 4

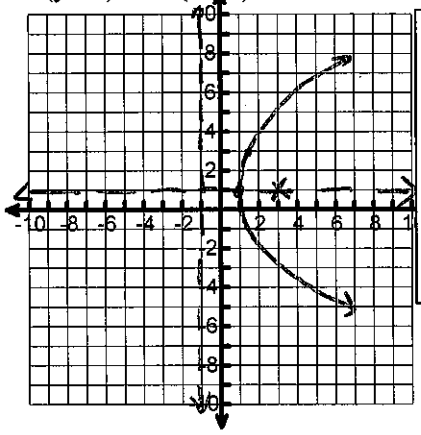
Graph each of the following:

7. $(x+2)^2 = -12(y-1)$



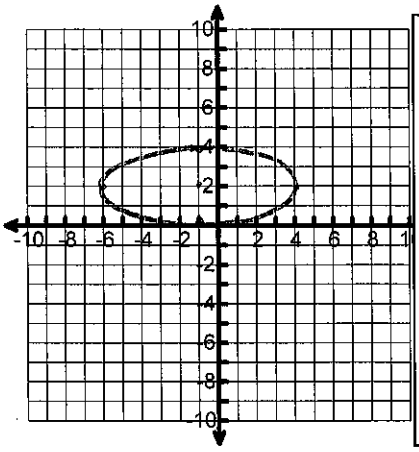
Vertex: $(-2,1)$
Foci: $(-2,-2)$
Directrix: $y = 4$
AOS: $x = -2$

8. $(y-1)^2 = 8(x-1)$



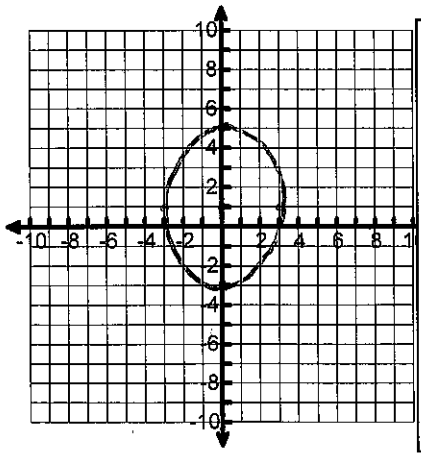
Vertex: $(1,1)$
Foci: $(3,1)$
Directrix: $x = -1$
AOS: $y = 1$

9. $\frac{(x+1)^2}{25} + \frac{(y-2)^2}{4} = 1$



Center: $(-1,2)$
Vertices: $(-6,2)(4,2)$
Co-vertices: $(-1,0)(-1,4)$
Foci: $(-5.6,2)(3.6,2)$
Major: 10
Minor: 4

10. $\frac{x^2}{9} + \frac{(y-1)^2}{16} = 1$

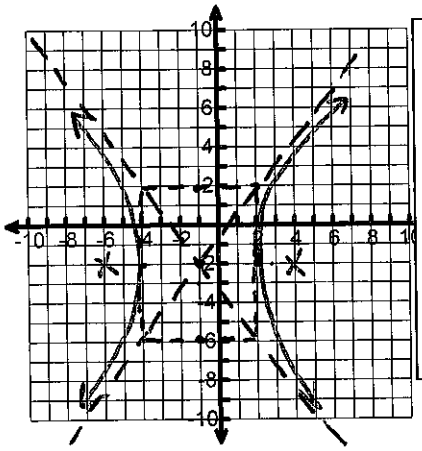


Center: $(0,1)$
Vertices: $(0,5)(0,-3)$
Co-vertices: $(3,1)(-3,1)$
Foci: $(0,-1.6)(0,3.6)$
Major: 8
Minor: 6

GSE PreCalculus: Unit 2 – Conics
Test 2 Review

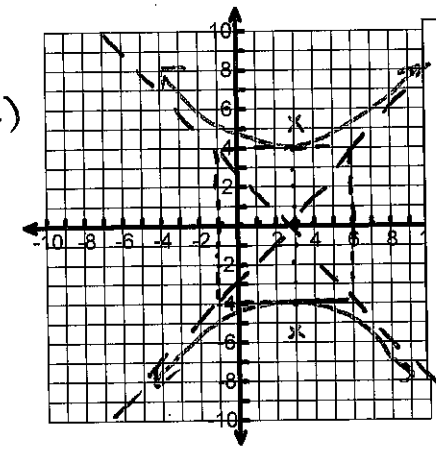
Name_____
Date_____ Period_____

11. $\frac{(x+1)^2}{9} - \frac{(y+2)^2}{16} = 1$



Center: $(-1,-2)$
Vertices: $(-4,-2)(2,-2)$
Foci: $(-6,-2)(4,-2)$
Transverse: 6
Conjugate: 8

12. $\frac{y^2}{16} - \frac{(x-3)^2}{16} = 1$



Center: $(3,0)$
Vertices: $(3,-4)(3,4)$
Foci: $(3,-5.7)(3,5.7)$
Transverse: 8
Conjugate: 8

13. Write the equation of the parabola with focus (3, -2) and directrix x = -5.

$(y+2)^2 = 16(x+1)$

14. Solve the following system of equations: $x = 2 + y$; $x^2 + y^2 = 100$.

$(8,6)$

15. Solve the following system of equations: $y = -x - 1$; $y^2 - x - 2y - 3 = 0$

$(0,-1)$
$(-3,2)$

16. Write the equation of the parabola with vertex (2, -1) and focus (4, -1)

$(y+1)^2 = 8(x-2)$

17. Write the equation of the circle with center (3, 4) and Area = 25π

$(x-3)^2 + (y-4)^2 = 25$

18. Identify and write the equation of the given conic: $x^2 + 4y^2 - 2x - 24y + 33 = 0$

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

19. Identify and write the equation of the given conic: $4x^2 - 25y^2 - 24x - 64 = 0$

$\frac{(x-3)^2}{25} - \frac{y^2}{4} = 1$

GSE PreCalculus: Unit 2 – Conics
Test 2 Review

Name_____
Date_____ Period_____

Cumulative Review Questions:

1. Perform the indicated operation: $\begin{bmatrix} 3 & 0 \\ 2y & 1 \end{bmatrix} * \begin{bmatrix} -2 & 3 \\ x & -4 \end{bmatrix}$ $\begin{bmatrix} -6 & 9 \\ -4y+x & 6y-4 \end{bmatrix}$

2. Perform the indicated operation: $\begin{bmatrix} x & 2 \\ -1 & 4 \end{bmatrix}^{-1}$ (inverse) $\frac{1}{4x+2}\begin{bmatrix} 4 & -2 \\ 1 & x \end{bmatrix}$

3. If $|X| = 26$, then find the value of r: $X = \begin{bmatrix} 3 & r \\ -5 & 2 \end{bmatrix}$ $r = 4$

4. Solve the following system: $\begin{aligned} 2x - 3y &= 16 \\ x - 2y &= 9 \end{aligned}$ $x = 5$, $y = -2$