Algebra 2: Assignment #:_____ Name_____

Final Review: Chapter 10

Date_____ Period____

1) Find the distance between the two points. Then find the midpoint of the line segment joining the two points.
(0, 0)(6, 8)

2) Find the distance between the two points. Then find the midpoint of the line segment joining the two points.
(0, 5) (-2, 0)

3) Find the distance between the two points. Then find the midpoint of the line segment joining the two points.
(-4, -2) (1, -5)

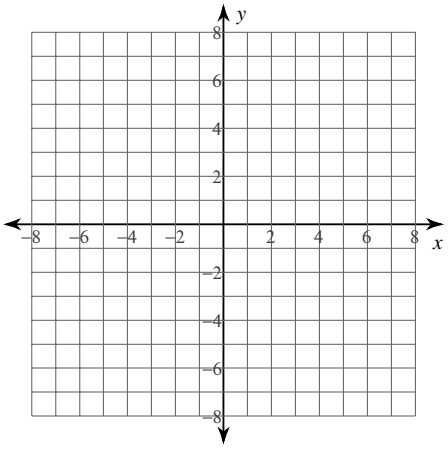
4) Find the distance between the two points. Then find the midpoint of the line segment joining the two points.
(3, 3) (3, 6)

5) Write an equation of the line that is tangent to the circle at that point.
$x^2 + y^2 = 65$; (-8, 1)

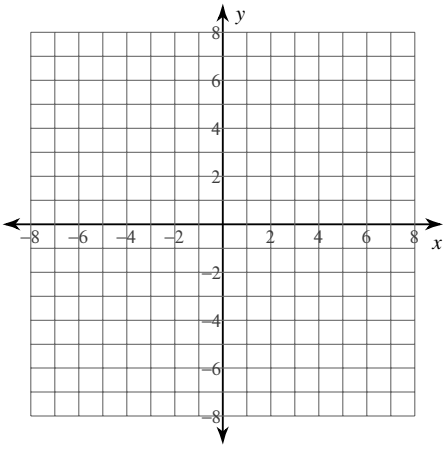
6) Write an equation of the line that is tangent to the circle at that point.
$x^2 + y^2 = 40$; (-2, 6)

Identify the center, vertices, co-vertices, and foci of each. Then sketch the graph.

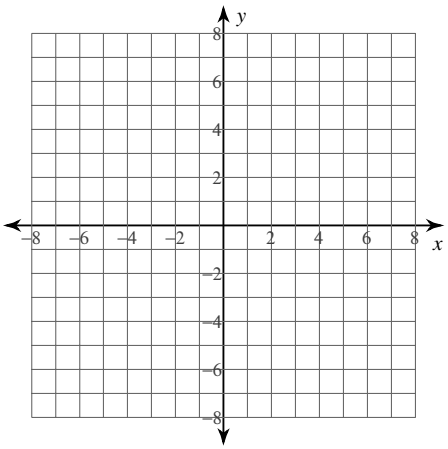
7) $\frac{x^2}{25} + \frac{(y+2)^2}{16} = 1$



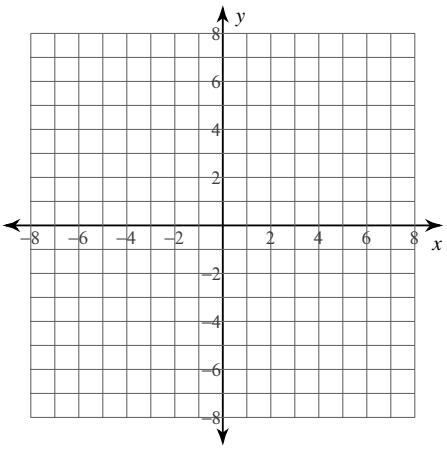
8) $\frac{(x+1)^2}{25} + \frac{y^2}{9} = 1$



9) $\frac{(x+1)^2}{25} + \frac{(y-3)^2}{16} = 1$



10) $\frac{x^2}{16} + \frac{y^2}{25} = 1$



Use the information provided to write the standard form equation of each ellipse.

11) Vertices: $(2, 3), (2, -23)$
Foci: $(2, -5), (2, -15)$

12) Vertices: $(-3, 21), (-3, -3)$
Co-vertices: $(7, 9), (-13, 9)$

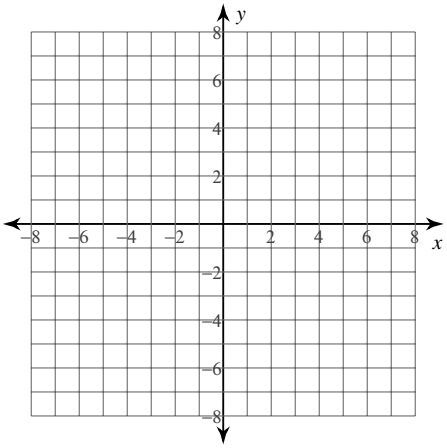
13) Foci: $(9, 13), (9, 7)$
Co-vertices: $(13, 10), (5, 10)$

14) $25x^2 + 9y^2 + 150x - 180y + 225 = 0$

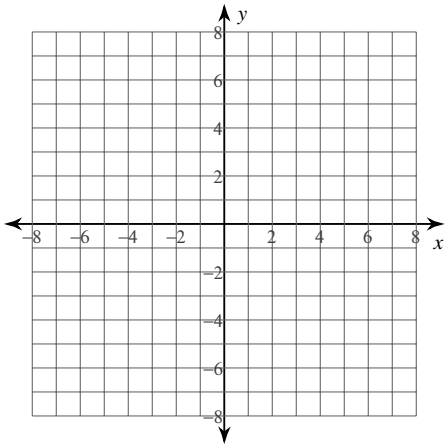
15) $25x^2 + 16y^2 - 50x + 64y - 311 = 0$

Identify the vertex, focus, axis of symmetry, and directrix of each. Then sketch the graph.

16) $-4(y - 5) = (x - 6)^2$



17) $-4(y - 4) = (x + 3)^2$



Use the information provided to write the transformational form equation of each parabola.

18) Vertex: $(5, 10)$, Focus: $\left(5, \frac{199}{20}\right)$

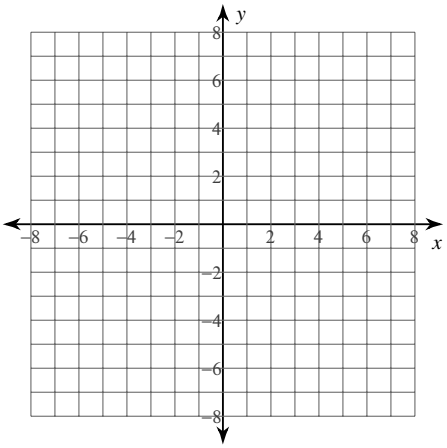
19) Vertex: $(-7, 9)$, Directrix: $y = \frac{71}{8}$

20) Focus: $\left(3, -\frac{37}{4}\right)$, Directrix: $y = -\frac{35}{4}$

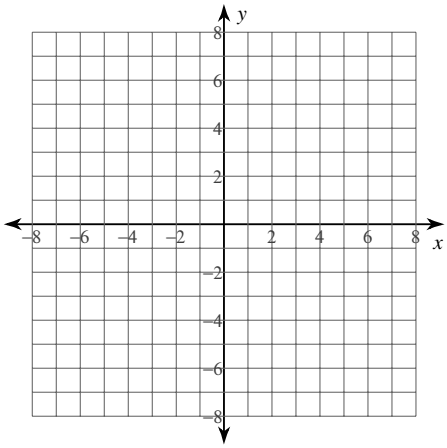
21) $x^2 - 16x + 2y + 46 = 0$

Identify the center and radius of each. Then sketch the graph.

22) $(x - 1)^2 + (y + 2)^2 = 4$



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



Use the information provided to write the standard form equation of each circle.

24) Center: $(6, 13)$
Radius: 2

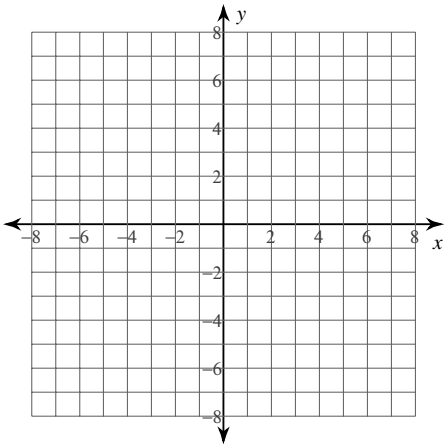
25) Center: $(16, -12)$
Point on Circle: $(15, -12)$

26) $x^2 + y^2 - 20x + 26y + 260 = 0$

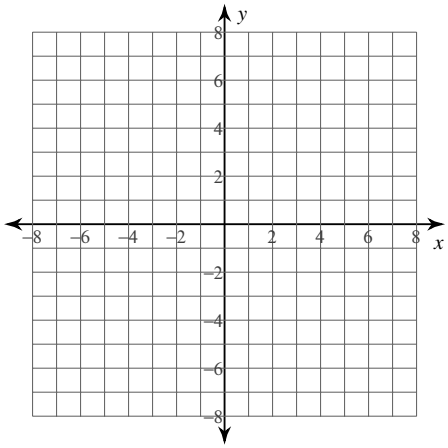
27) $x^2 + y^2 - 26x - 24y + 288 = 0$

Identify the vertices, foci, and asymptotes of each. Then sketch the graph.

28) $\frac{y^2}{25} - \frac{x^2}{25} = 1$



29) $x^2 - \frac{y^2}{4} = 1$



Use the information provided to write the standard form equation of each hyperbola.

30) Vertices: $(3, 0), (-3, 0)$
Foci: $(5, 0), (-5, 0)$

31) $x^2 - 4y^2 - 12x + 8y - 68 = 0$

Solve each system of equations.

32) $x^2 + y^2 - 64x + 24 = 0$
$-3x + y - 4 = 0$

33) $-2y^2 - 41x + y - 159 = 0$
$x - y = 1$

34) $x^2 + 2y^2 + 8x - 12y - 73 = 0$
$x^2 + y^2 + 8x - 6y - 33 = 0$

35) $y^2 + 8x - 4y - 37 = 0$
$-8x^2 + y^2 + 16x - 4y - 21 = 0$