Algebra 2 Name_____

Unit 11 Corrective Assignment - Conic Sections

Period____

Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.

1) $(4, -5)$, $(0, 1)$

2) $(-6, -3)$, $(2, 6)$

Find the midpoint of the line segment with the given endpoints.

3) $(8, -7)$, $(-6, -8)$

4) $(-5, -2)$, $(11, 6)$

Find the equation of the perpendicular bisector between the two given points.

5) $(4, -6)$, $(6, 4)$

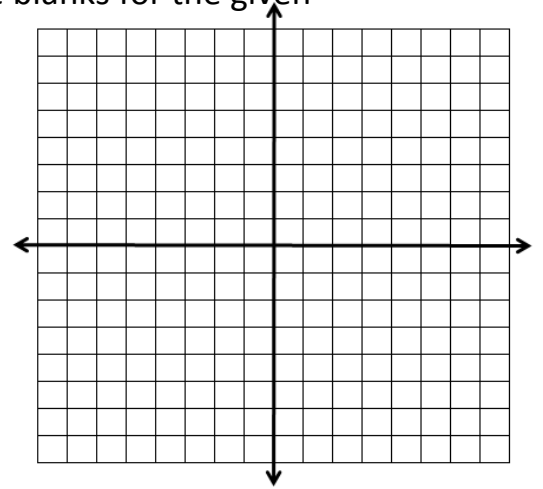6. Sketch the graph of $(y + 2)^2 = 12(x - 2)$ and fill in the blanks for the given information.

Coordinate of vertex:

Direction it opens:

Axis of symmetry:

Coordinate of focus:

Equation for directrix:

For 7-8, find an equation for the parabola that satisfies the given condition. Use the same form we used in our notes. (The quantity squared will be isolated.)

7. Vertex: $(0, 2)$, directrix: $y = -4$
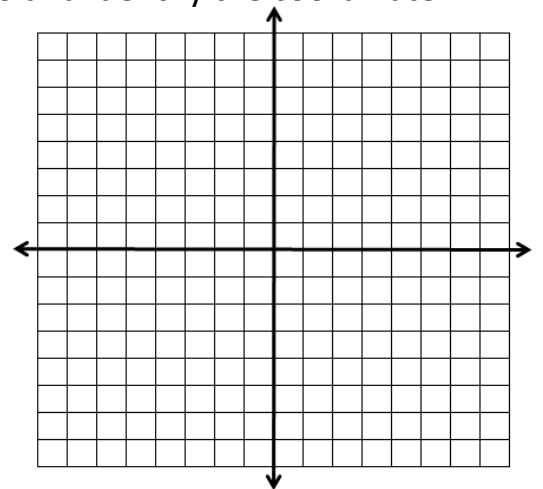
8. Focus: $(5, -8)$, directrix $x = -1$

9. Sketch the ellipse represented by $x^2 + 36(y + 1)^2 = 36$ and identify the coordinate points for each item listed.
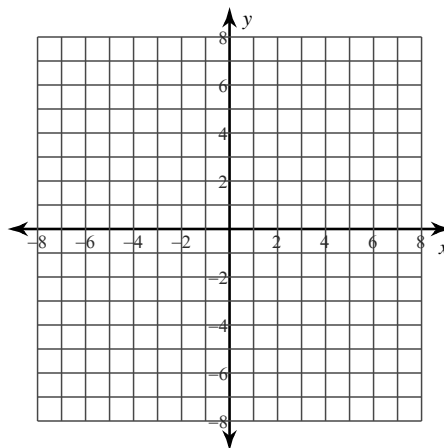
center:

vertices:

co-vertices:

foci:

10. The point $(-5, \ 7)$ is a point on a circle whose center is at the origin. Write an equation of the line tangent to the circle at the given point.

Use the information provided to write the standard form equation of each circle.
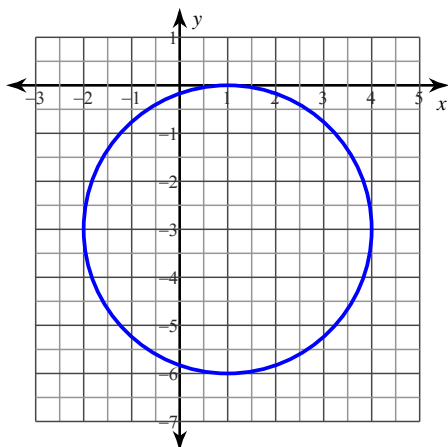
Identify the center and radius of each. Then sketch the graph.

11) Center: $(2, 13)$
   Radius: 3

12) $(x - 2)^2 + (y + 2)^2 = 16$

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

13)

14) Center: $(9, 3)$
   Point on Circle: $(6, 7)$

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

15) Vertices: $(2, 2), (2, -18)$
   Co-vertices: $(5, -8), (-1, -8)$

16) Vertices: $(10, 10), (10, -16)$
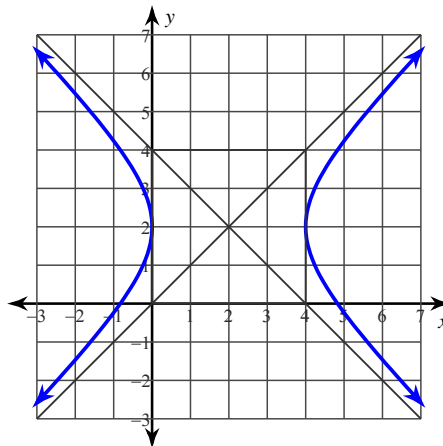   Foci: $(10, 2), (10, -8)$

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

17) Vertices: $(17, -4), (-3, -4)$
   Endpoints of Conjugate Axis: $(7, -2)$
   $(7, -6)$

18) Center at $(-1, 1)$
   Transverse axis is horizontal; central rectangle
   is 14 units wide and 22 units tall

19) Vertices: $(-4, -1), (-16, -1)$
   Conjugate Axis is 14 units long

20)

Classify each conic section and write its equation in standard form.

21) $3y^2 + x + 30y + 77 = 0$

22) $-3x^2 + 2y^2 - 30 = 0$

23) $x^2 + y^2 - 4x + 8y + 18 = 0$