Name _____ Date _____ Period _____

DIRECTIONS: For #1-2, identify the equation (#2 only), center, direction of the transverse axis, verticies, foci, and slopes of asymptotes for the following hyperbolas. Use the provided grids to graph the hyperbolas (use a straightedge for the asymptotes).
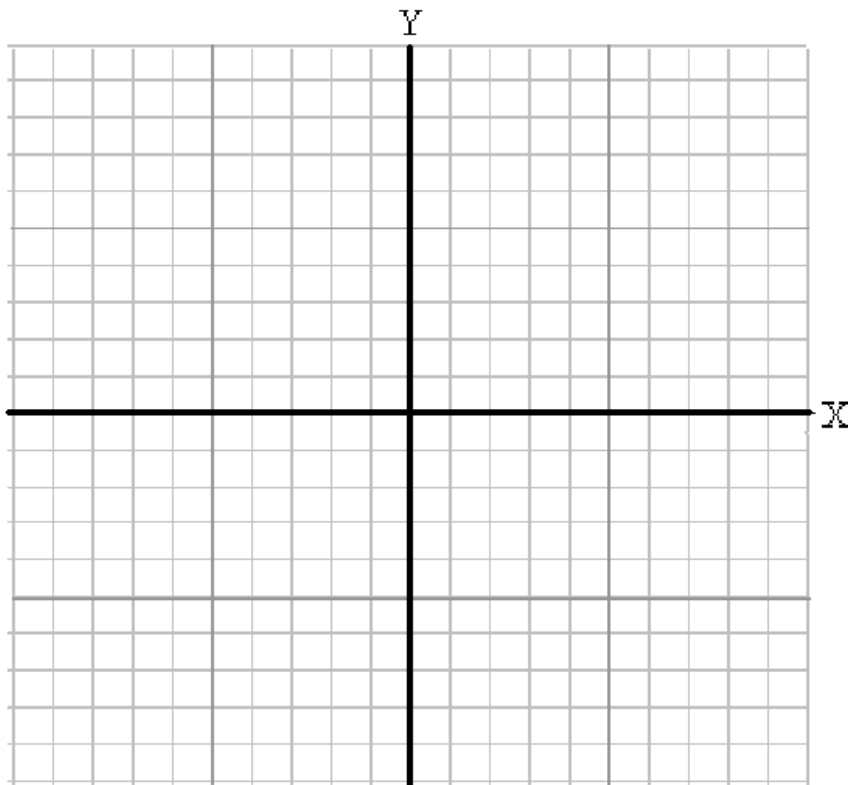
1. $\dfrac{y^2}{36} - \dfrac{x^2}{25} = 1$

Center _____   Transverse axis _____

Verticies _____

Foci _____

Slope of asymptotes _____

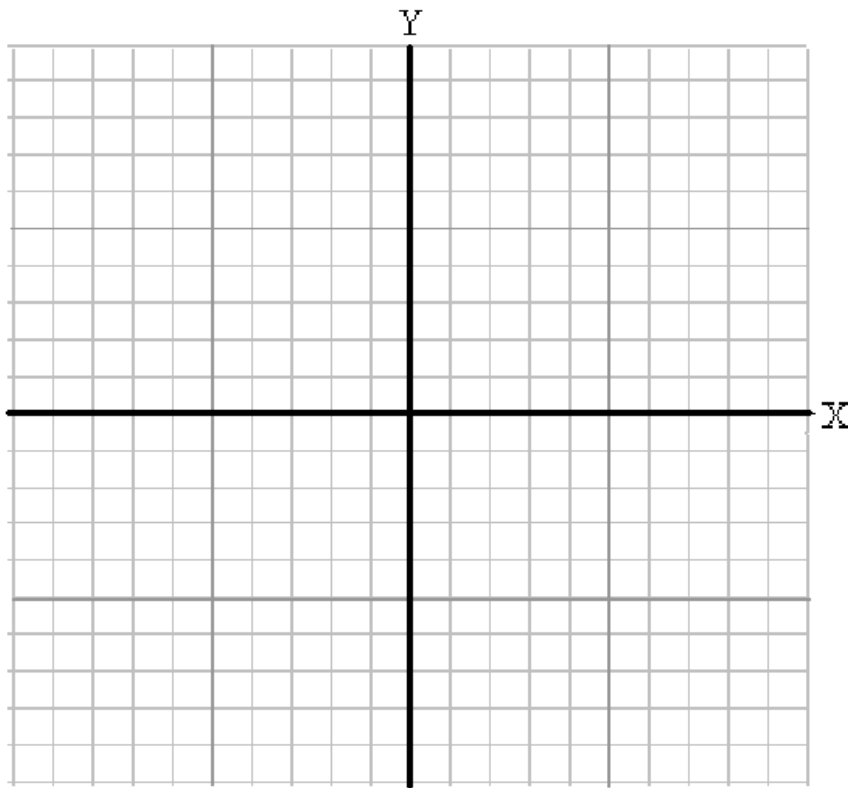**2.** $25y^2 - 4x^2 + 100 = 0$

Equation _____

Center _____ Transverse axis _____
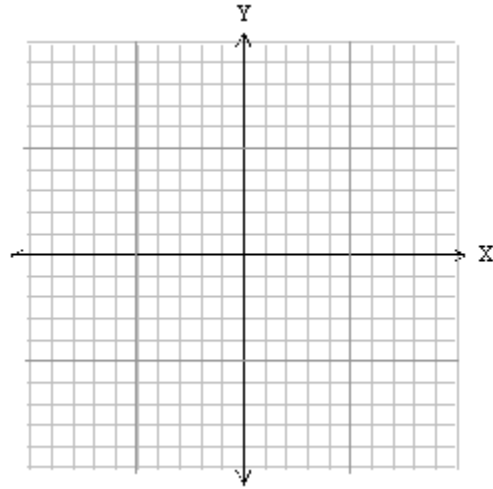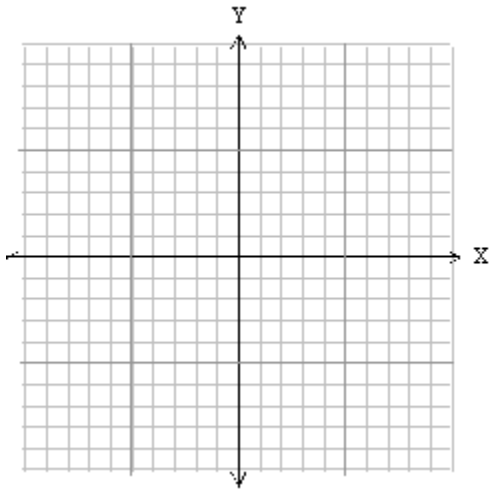
Verticies _____

Foci _____

Slope of asymptotes _____

<u>DIRECTIONS</u>: For #3-4, write equations for the described hyperbolas in the provided blanks. Graph grids are provided for your convenience- you are not required to use them.

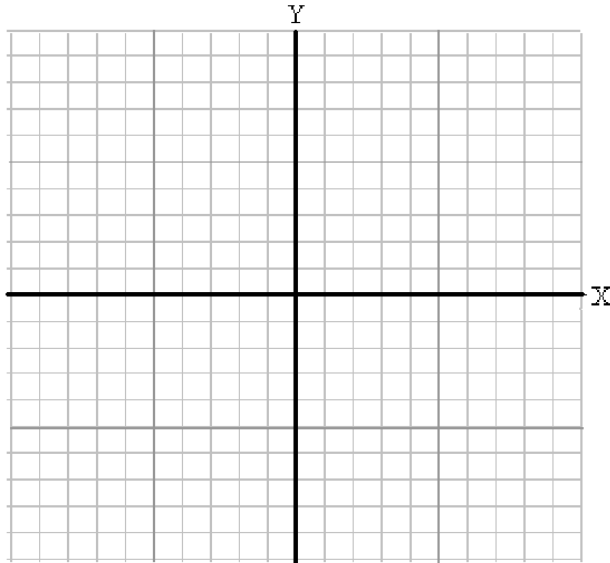**3.** Foci: $(-3, 0), (3, 0)$
   Difference of focal radii: 4

4. Foci: $(2, 4), (-4, 4)$
   Difference of focal radii: 2

_____   _____

DIRECTIONS: For #5, determine the center and foci of the hyperbola described by the equation. A graph grid is provided for your convenience- you are not required to use it.

5. $\dfrac{(x+2)^2}{25} - \dfrac{(y-3)^2}{11} = 1$

Center_____   Foci _____

DIRECTIONS: For #6-9, identify the conic sections (circle, ellipse, hyperbola, parabola) from their equations.

6. $9x^2 - 4y^2 + 36x - 24y - 36 = 0$ **8.** $y^2 - 2y - 4x + 9 = 0$

_____   _____

7. $9x^2 + 4y^2 + 36x - 24y - 36 = 0$ **9.** $2x^2 + 2y^2 + 8x + 12y + 8 = 0$

_____   _____