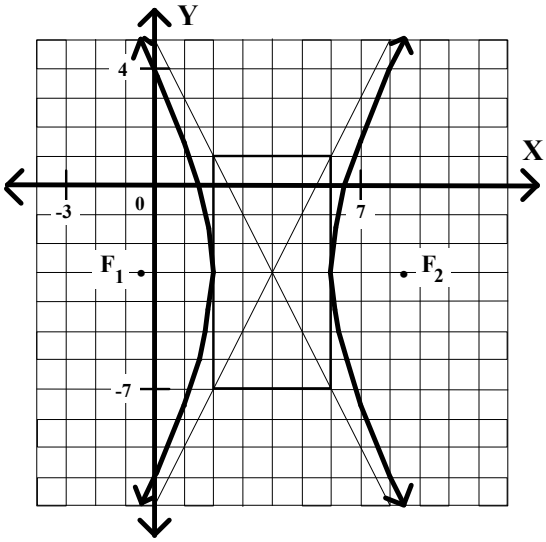
Algebra II Worksheet #4 Unit 7 Selected Solutions

Write the standard form equation and the general form equation of each of the following.

4.



Type 1

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

center (4, -3) **a = 2**

h = 4 k = -3 **b = 4**

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

Standard form

$$\frac{(x-4)^2}{4} - \frac{(y+3)^2}{16} = 1$$

$$4(x-4)^2 - (y+3)^2 = 16$$
$$4(x^2 - 8x + 16) - (y^2 + 6y + 9) = 16$$
$$4x^2 - 32x + 64 - y^2 - 6y - 9 = 16$$
$$4x^2 - y^2 - 32x - 6y + 55 = 16$$
$$4x^2 - y^2 - 32x - 6y + 39 = 0$$

general form

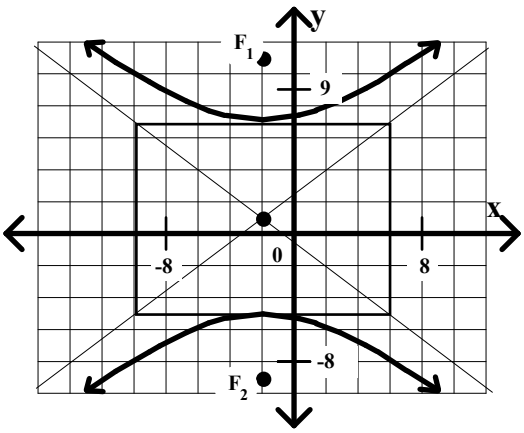
In each problem you are given a general from equation. Write the standard form equation and sketch a graph on the graph paper provided.

7. $9x^2 - 16y^2 + 36x + 32y + 596 = 0$

$$9x^2 + 36x - 16y^2 + 32y = -596$$
$$9(x^2 + 4x \quad) - 16(y^2 - 2y \quad) = -596$$
$$9(x^2 + 4x + 4) - 16(y^2 - 2y + 1) = -596 + 36 - 16$$
$$\frac{9(x+2)^2}{-576} - \frac{16(y-1)^2}{-576} = \frac{-576}{-576}$$

Standard form

$$\frac{(y-1)^2}{36} - \frac{(x+2)^2}{64} = 1$$



type 2

h = -2

k = 1

center (-2, 1) **$a^2 = 36$** **$b^2 = 64$** **$c^2 = 100$**

a = 6 **b = 8** **c = 10**