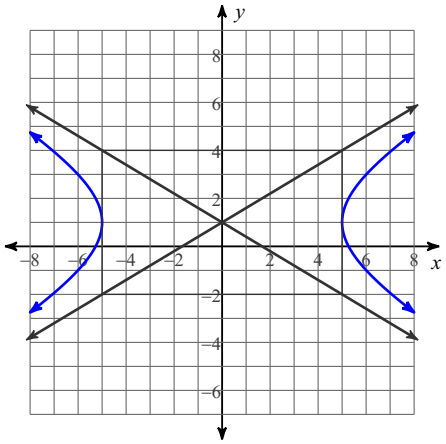
Algebra 2 Name_____ ID: 1

9.5 Hyperbolas #2

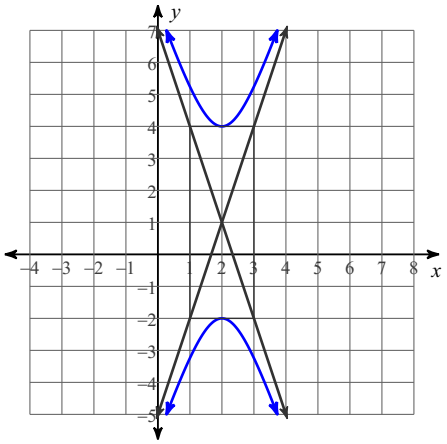
Date_____ Period____

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

1)



2)



3) $4x^2 - 9y^2 + 64x - 36y - 104 = 0$

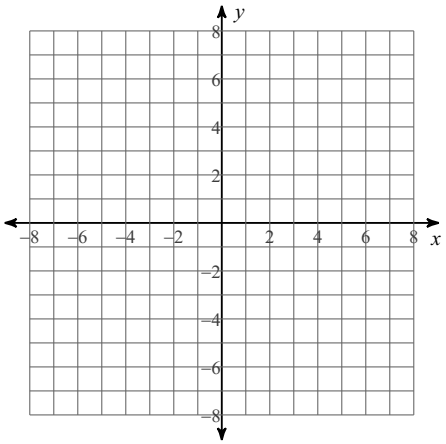
4) $4x^2 - y^2 + 8x + 4y - 144 = 0$

5) $36x^2 - y^2 - 72x - 6y - 9 = 0$

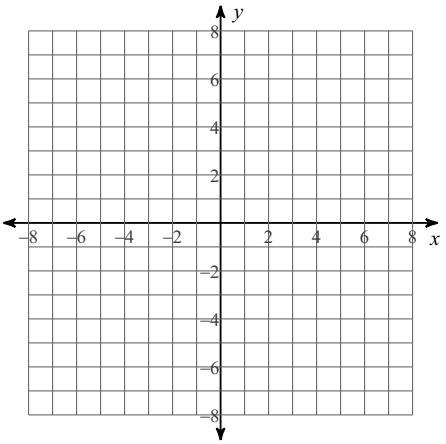
6) $-x^2 + 100y^2 - 12x + 200y - 36 = 0$

Rewrite each hyperbola in standard form. Then identify the vertices and foci of each. Then sketch the graph.

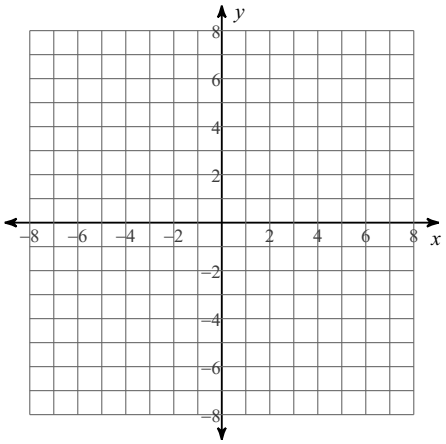
7) $-16x^2 + y^2 - 16 = 0$



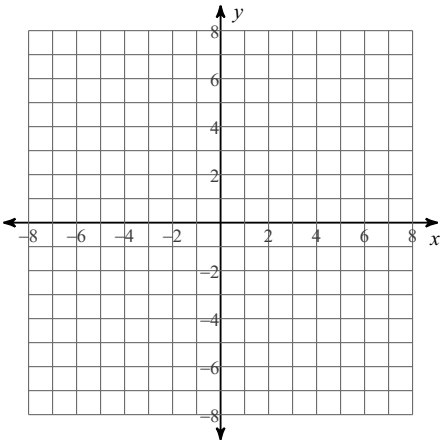
8) $2x^2 - 5y^2 - 50 = 0$



9) $x^2 - y^2 + 6x + 6y - 4 = 0$



10) $-x^2 + 4y^2 - 2x + 8y - 13 = 0$



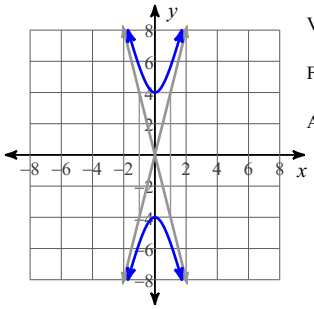
Answers to 9.5 Hyperbolas #2 (ID: 1)

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

3) $\frac{(x+8)^2}{81} - \frac{(y+2)^2}{36} = 1$

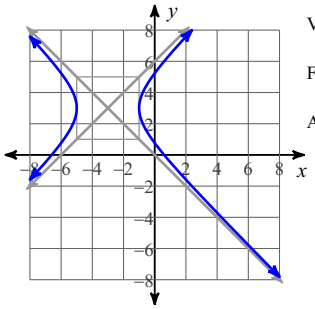
5) $(x-1)^2 - \frac{(y+3)^2}{36} = 1$

7)



Vertices: $(0, 4)$ $(0, -4)$
Foci: $(0, \sqrt{17})$ $(0, -\sqrt{17})$
Asym.: $y = 4x$ $y = -4x$

9)



Vertices: $(-1, 3)$ $(-5, 3)$
Foci: $(-3 + 2\sqrt{2}, 3)$ $(-3 - 2\sqrt{2}, 3)$
Asym.: $y = x + 6$ $y = -x$