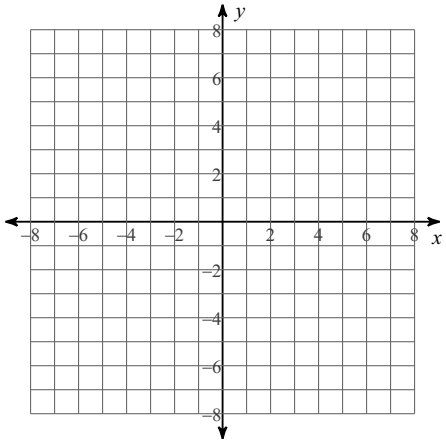
Algebra 2 Name_____ ID: 1

Hyperbola

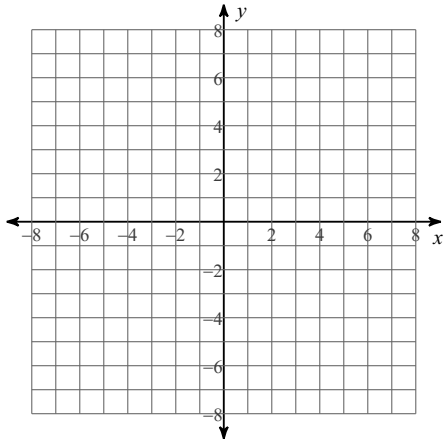
Date_____ Period____

Identify the direction of opening of each. Then sketch the graph.

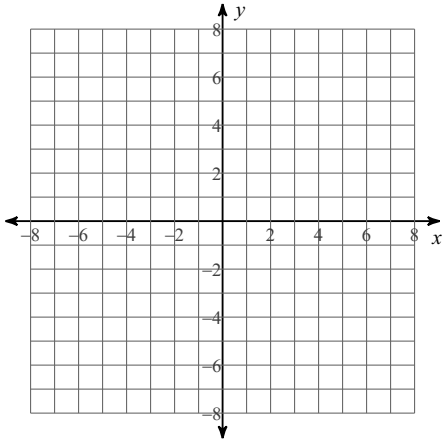
1) $\frac{(x-2)^2}{4} - \frac{y^2}{25} = 1$



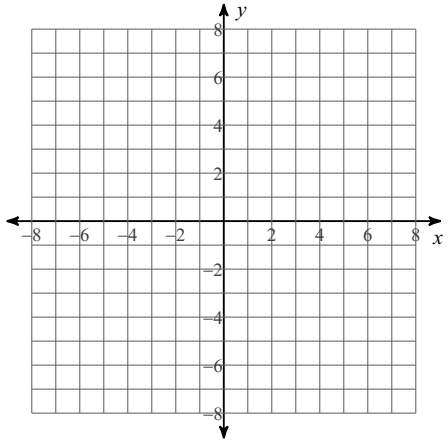
2) $\frac{(x-2)^2}{9} - \frac{(y-3)^2}{4} = 1$



3) $\frac{(y-1)^2}{4} - \frac{x^2}{25} = 1$

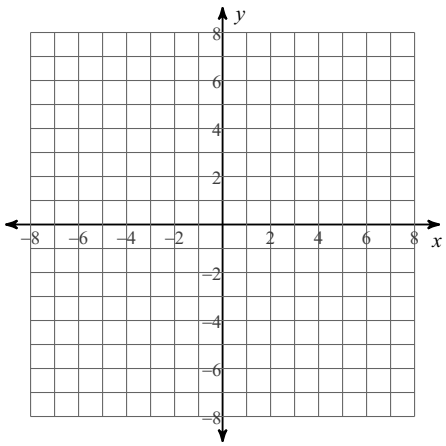


4) $\frac{(y-1)^2}{9} - \frac{(x+1)^2}{9} = 1$

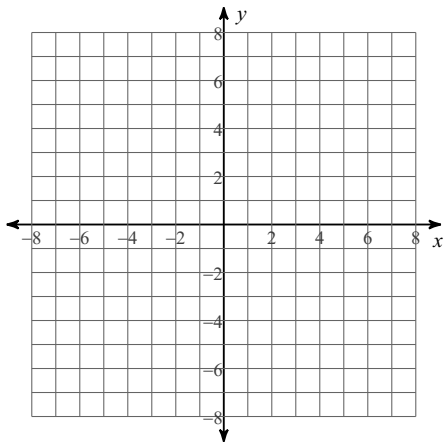


Identify the direction of opening, length of the transverse axis, and length of the conjugate axis of each. Then sketch the graph.

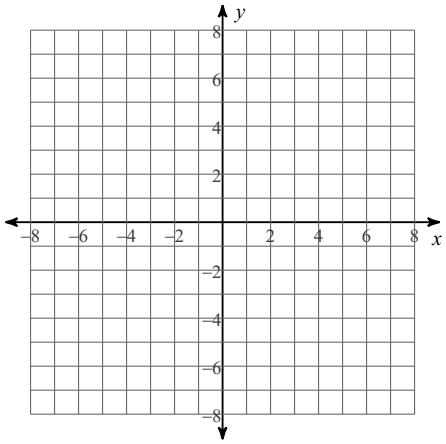
5) $-9x^2 + y^2 - 36x - 2y - 44 = 0$



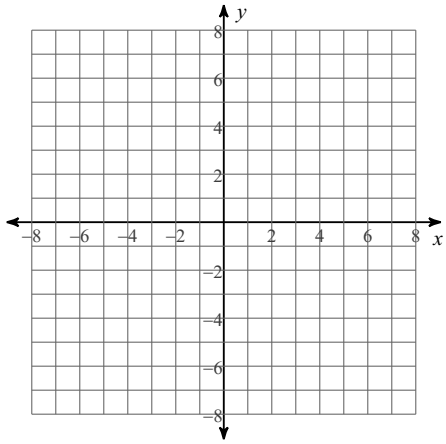
6) $-x^2 + 4y^2 - 2x - 24y + 19 = 0$



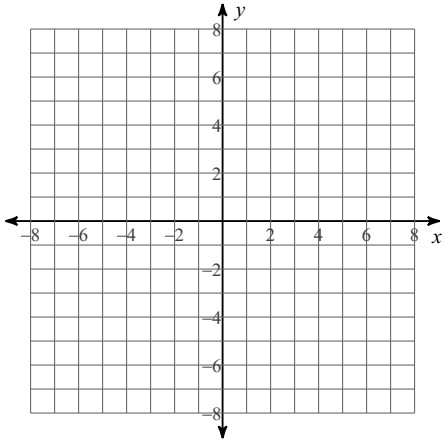
7) $-25x^2 + 16y^2 - 400 = 0$



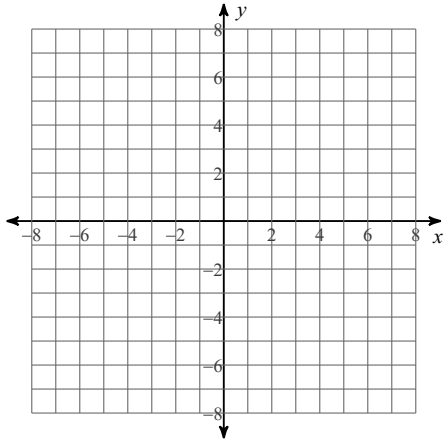
8) $-x^2 + 25y^2 + 150y + 200 = 0$



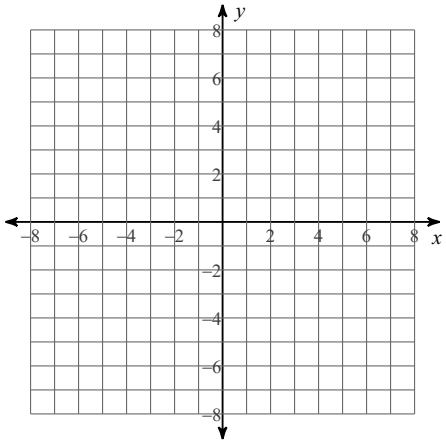
9) $25x^2 - 4y^2 + 50x - 75 = 0$



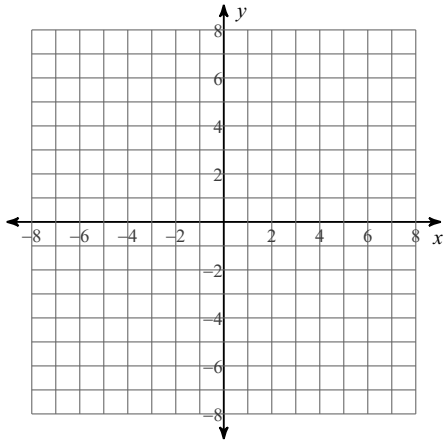
10) $x^2 - 9y^2 - 2x - 54y - 89 = 0$



11) $9x^2 - 25y^2 - 100y - 325 = 0$



12) $25x^2 - y^2 - 50x = 0$



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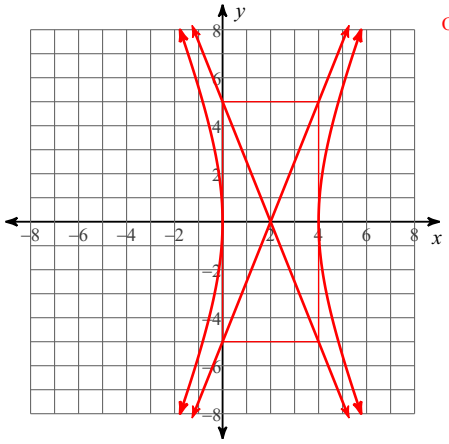
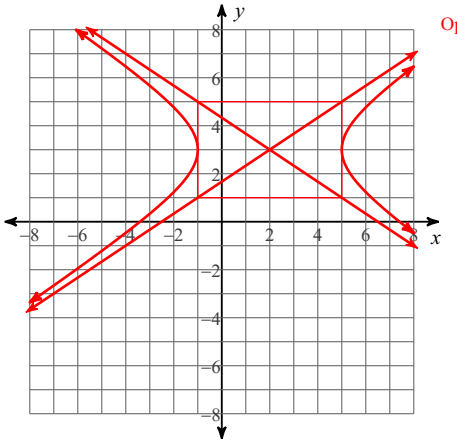


Opens left/right

2) $\frac{(x-2)^2}{9} - \frac{(y-3)^2}{4} = 1$



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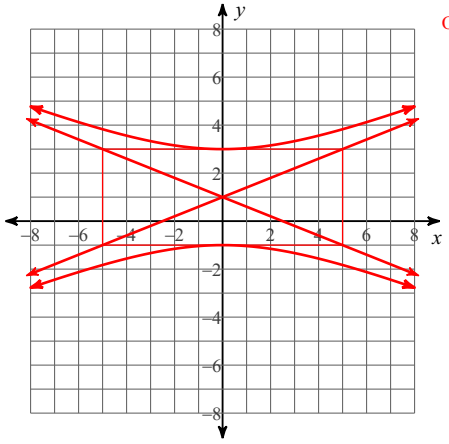
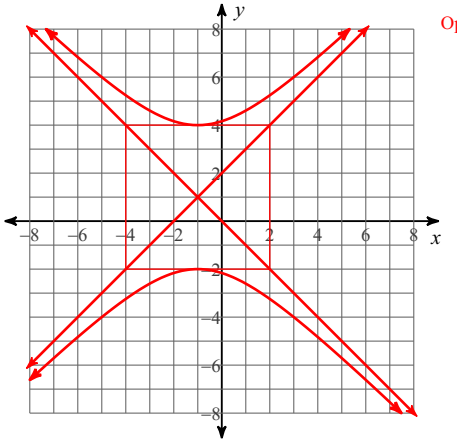
3) $\frac{(y-1)^2}{4} - \frac{x^2}{25} = 1$



Opens up/down

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



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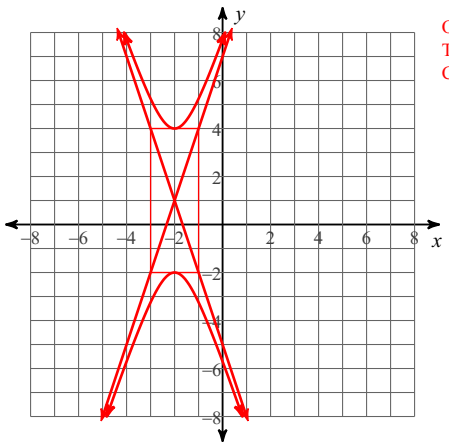
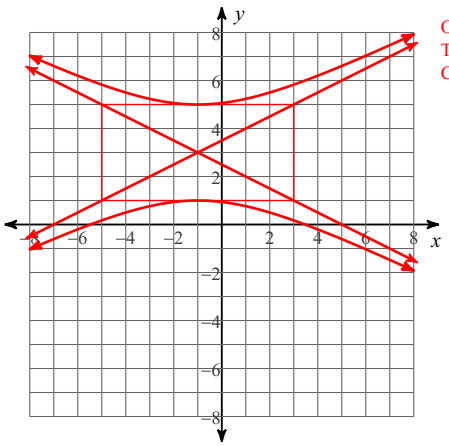
Identify the direction of opening, length of the transverse axis, and length of the conjugate axis of each. Then sketch the graph.

5) $-9x^2 + y^2 - 36x - 2y - 44 = 0$



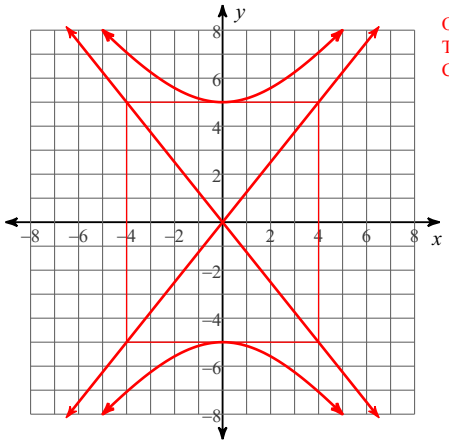
Opens up/down
Transverse Axis: 6 units
Conjugate Axis: 2 units

6) $-x^2 + 4y^2 - 2x - 24y + 19 = 0$



Opens up/down
Transverse Axis: 4 units
Conjugate Axis: 8 units

7) $-25x^2 + 16y^2 - 400 = 0$



Opens up/down
Transverse Axis: 10 units
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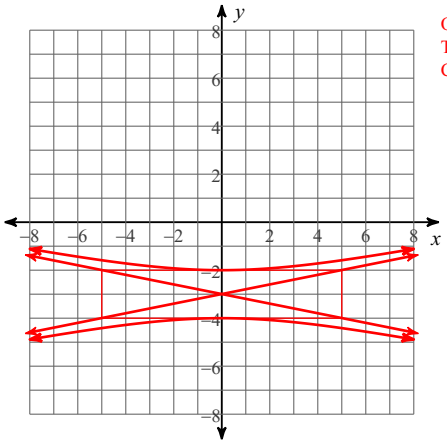
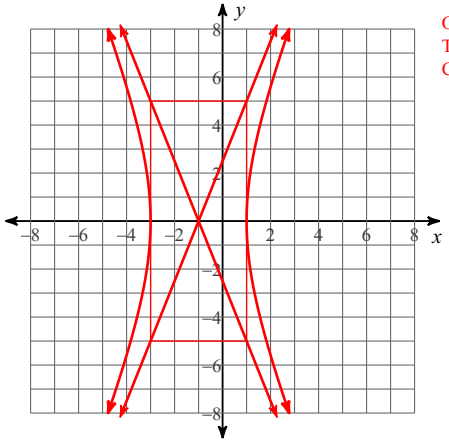
8) $-x^2 + 25y^2 + 150y + 200 = 0$



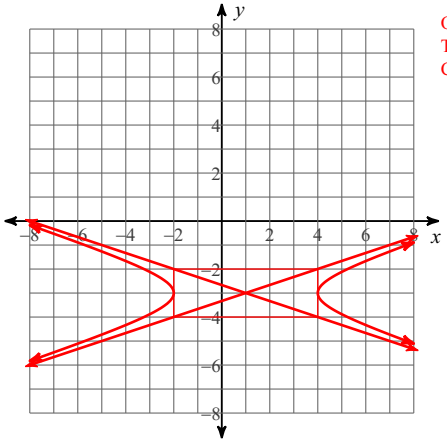
Opens up/down
Transverse Axis: 2 units
Conjugate Axis: 10 units

9) $25x^2 - 4y^2 + 50x - 75 = 0$



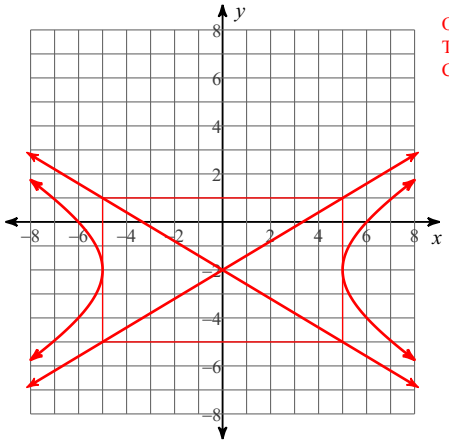
Opens left/right
Transverse Axis: 4 units
Conjugate Axis: 10 units

10) $x^2 - 9y^2 - 2x - 54y - 89 = 0$



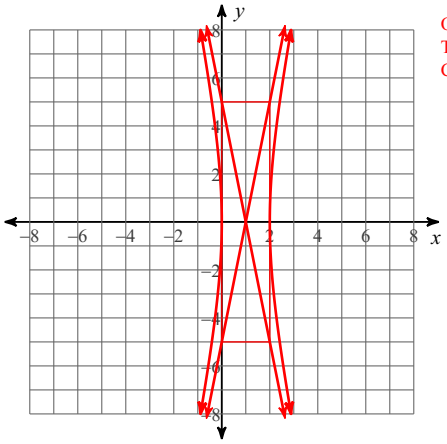
Opens left/right
Transverse Axis: 6 units
Conjugate Axis: 2 units

11) $9x^2 - 25y^2 - 100y - 325 = 0$



Opens left/right
Transverse Axis: 10 units
Conjugate Axis: 6 units

12) $25x^2 - y^2 - 50x = 0$



Opens left/right
Transverse Axis: 2 units
Conjugate Axis: 10 units