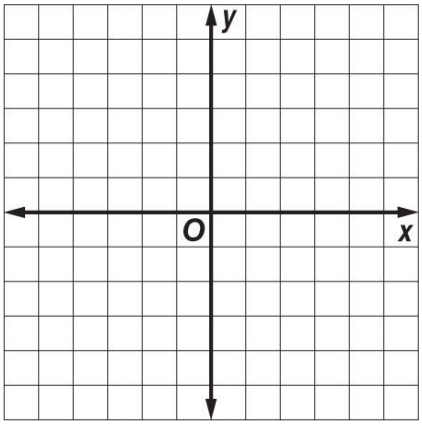
Pre-Calculus
REVIEW: 7.1-7.2 (Parabolas, Ellipses, Circles)

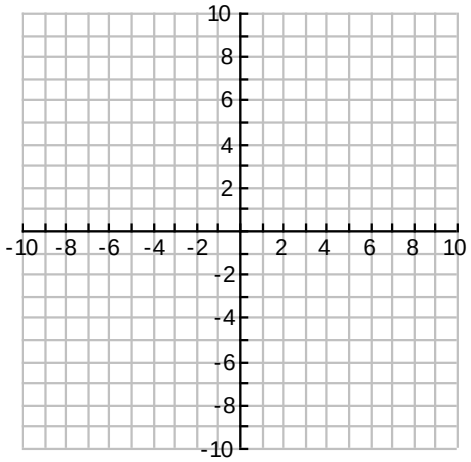
Name: _____

1. Graph the parabola given by $(x - 2)^2 = -12(y - 3)$.



2. Write the equation of the parabola: $y = x^2 + 14x - 104$ in standard form.

For numbers 3 – 6, use the following equation: $\mathbf{2y^2 - 16y - 20x + 72 = 0}$.



3. Identify the vertex.

4. Identify the focus.

5. Identify the axis of symmetry.

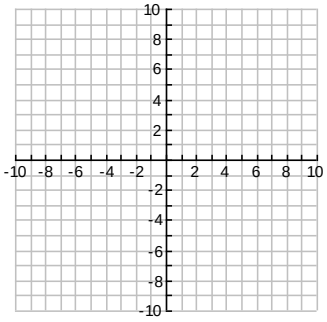
6. Identify the directrix.

For 7 and 8, determine the orientation of the parabola. (opens up/left/down/right)

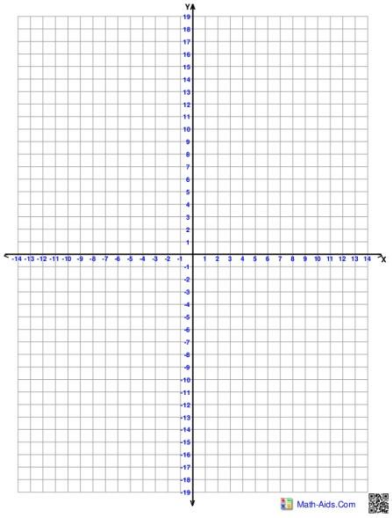
7. vertex: (–5, 1), focus (–5, 3)

8. directrix: $y = 4$; $p = -2$

9. Write an equation for the parabola with vertex (7, 10) and directrix $x = 1$.



10. Write the equation for the graph of a parabola with vertex (8, 19) and focus (4.75, 19).



11. Write $\mathbf{5x^2 + 2y^2 + 30x - 16y + 27 = 0}$ in standard form.

12. Identify the conic in question number 11. (Is it a parabola, ellipse, or circle?)

13. Graph the ellipse given by $\frac{(x-9)^2}{9} + \frac{(y+3)^2}{36} = 1$.

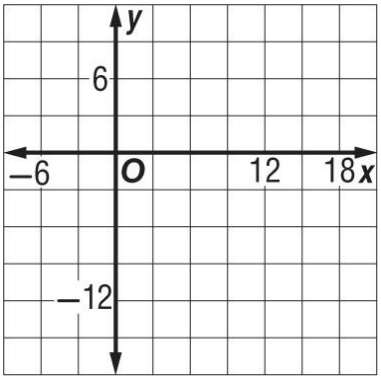
Identify the ordered pairs of the following:

Center:

Vertices:

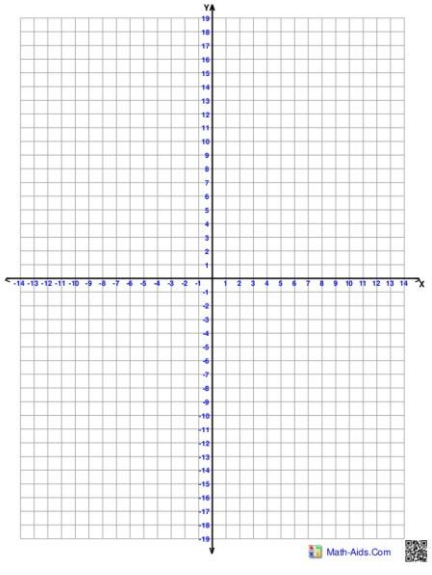
Co-Vertices:

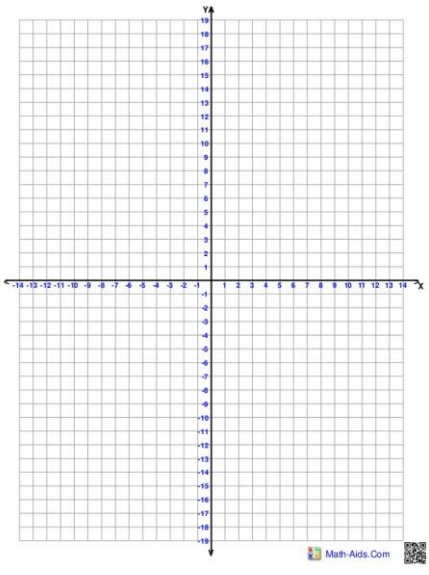
Foci:



14. What is the equation for an ellipse with vertices (–7, –3), (13, –3) and foci (–5, –3), (11, –3)?

15. Write an equation, in standard form, for the ellipse with the given characteristics: foci (–6, 9), (–6, –3); length of major axis is 20.





16. Write the equation of a circle with a center located at (3, –2) and a radius 11 units long.