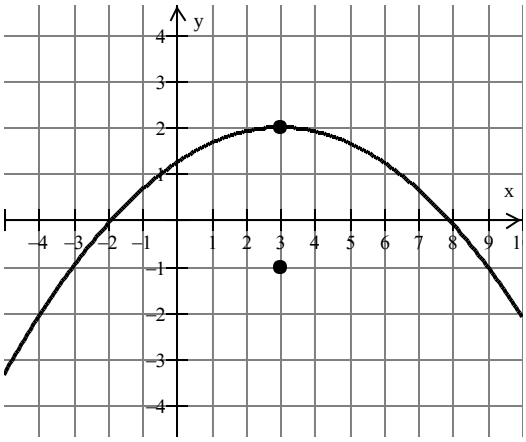
Math 261 – Lab 21 **Conic Sections – Part 1** Name_____

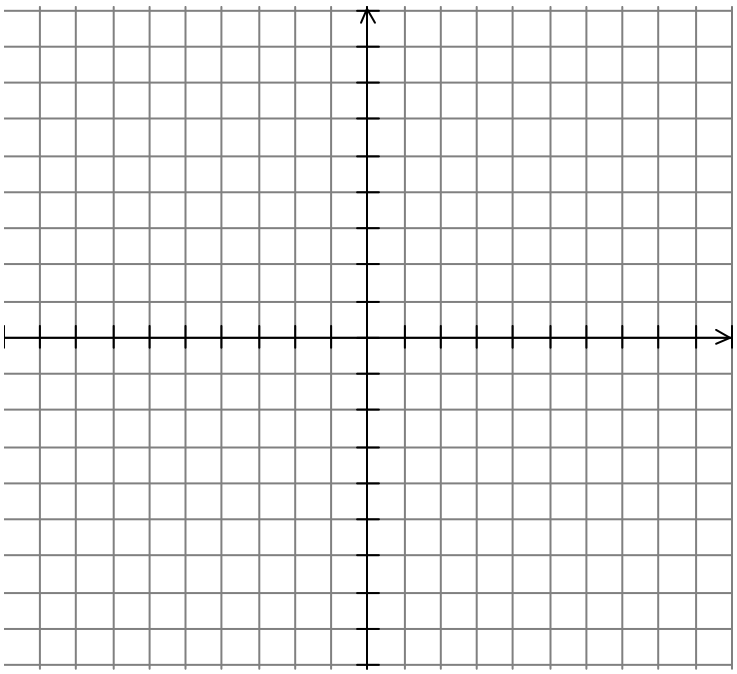
Show all work for credit. Also, give exact answers unless otherwise noted.

1. Find an equation of the given parabola where the focus and vertex are shown.

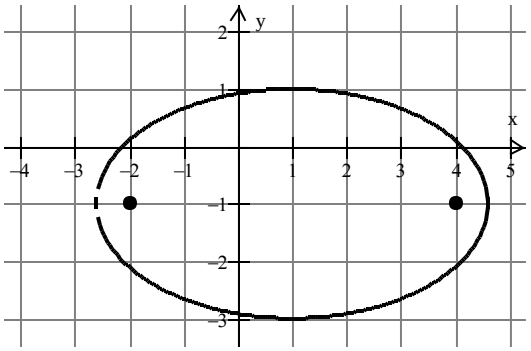


2. Find an equation of the parabola that has a vertex $V(3, 7)$, directrix perpendicular to the x-axis, and that passes through the point (1, 9).

3. Find the vertex, focus, and directrix of the parabola described by $3y^2 - 4x - 12y = 0$. Sketch its graph, showing the focus and directrix.



4. Find an equation of the given ellipse with the given foci.



5. Find an equation of the ellipse that has vertices $V(1, 2)$ and $V'(1, -14)$, and a focus $F(1, -1)$.

6. Find the vertices and foci of the ellipse given by the equation $x^2 + 4y^2 + 8x - 40y + 80 = 0$.
Sketch the graph and show the foci.