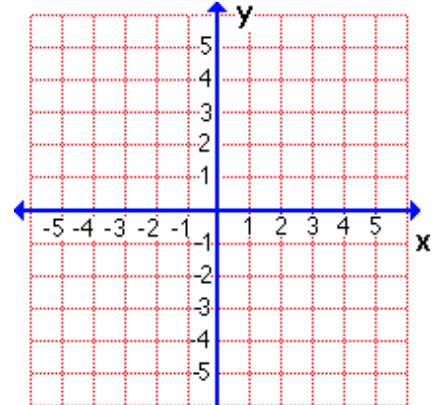


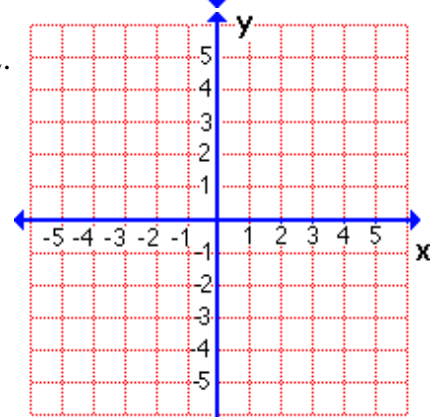
# Conic Sections Worksheet

Name \_\_\_\_\_

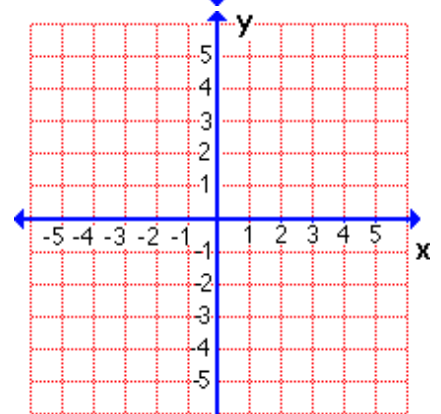
1. Give an equation of the parabola with focus  $(1, 1)$  and directrix  $y = 3$ . Then draw the curve with the vertex, focus and directrix.



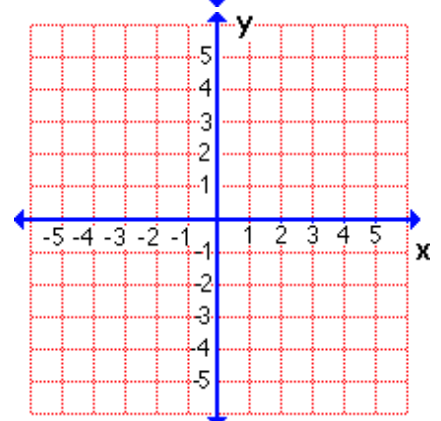
2. Give an equation of the parabola passing through  $(0, -2)$  that has vertex  $(-1, 2)$  and axis of symmetry  $y = 2$ . Draw the curve with its focus and directrix.



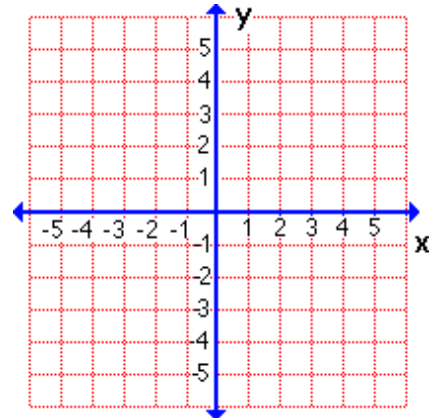
3. Give an equation of the ellipse that has foci  $F_1(0,2)$  and  $F_2(4,2)$  and vertices  $V_1(-1, 2)$  and  $V_2(5, 2)$ . Then sketch it with its foci and the eccentricity and the other vertices.



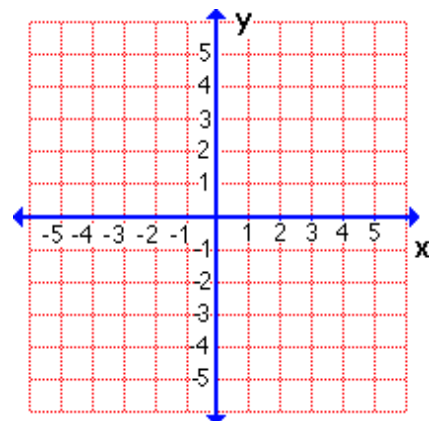
4. Sketch the hyperbola  $x^2 - 9y^2 - 4x - 18y = 14$ . Find the vertices, foci, asymptotes and eccentricity.



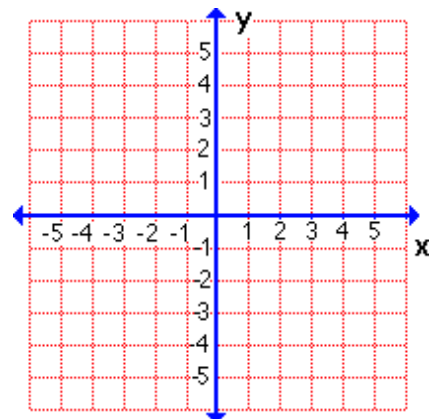
5. Find an equation for the parabola with axis of symmetry  $x = 0$  that passes through the points  $(1, 4)$  and  $(2, 7)$ .



6. Find an equation for the hyperbola with foci  $(3, 0)$  and  $(-3, 0)$  and asymptotes  $y = \pm x$ . Find the eccentricity.



7. Find an equation for the hyperbola with foci  $(0, 5)$  and  $(0, -5)$  and asymptotes  $y = \pm \frac{3}{4}x$ . Find the eccentricity.



8. Sketch the graph of  $x^2 - y^2 = 1$ ? Find the vertices, foci, asymptotes and eccentricity.

