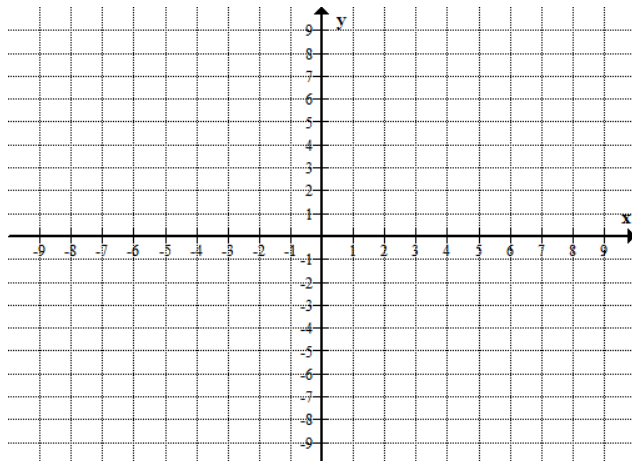


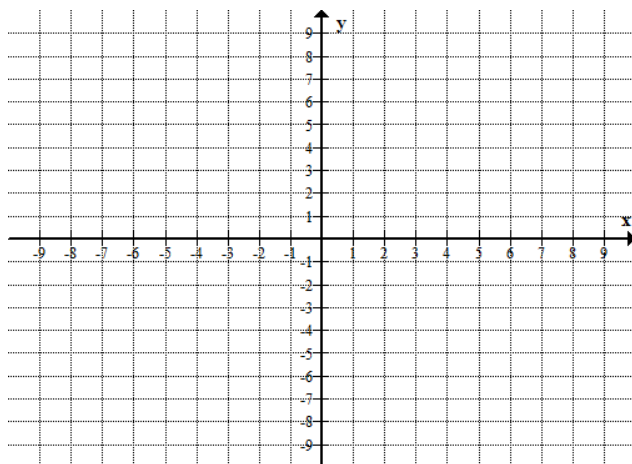
MAC 1140
LA session

Week 9

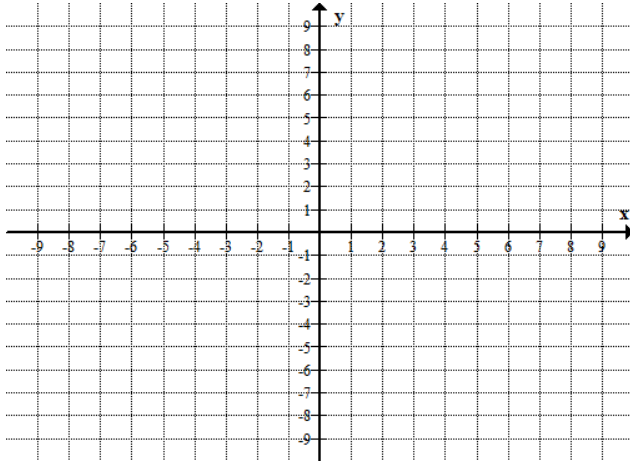
1. Find the equation of the parabola with focus at $(0, -2)$ and the directrix $y = 2$.
2. Sketch the equation of the parabola $y^2 = -8x$. Find the coordinates of the vertex, focus and the equation of the directrix. What are the coordinates of the endpoints of latus rectum?



3. Find the vertex, focus and the directrix of the parabola given by the equation $(x+2)^2 = 2(y - 3)$.
 4. Graph the parabola whose equation is given below. Determine its vertex, focus and the directrix
- a) $(y - 4)^2 = 12(x + 2)$

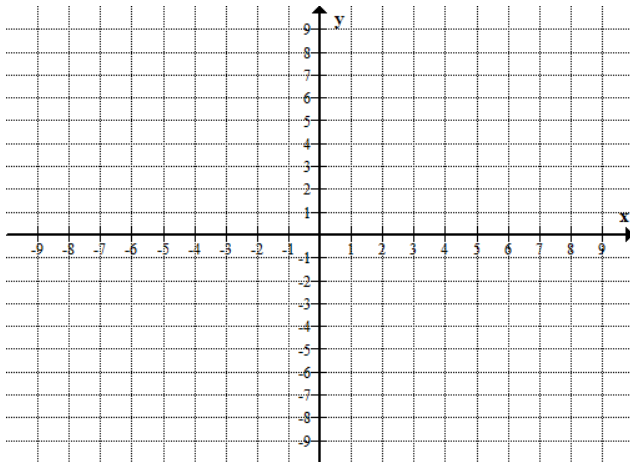


b) $2x^2 + 4x - 16y - 30 = 0$



5. Find the equation of the parabola with focus at (3,2) and the vertex at (1,2).

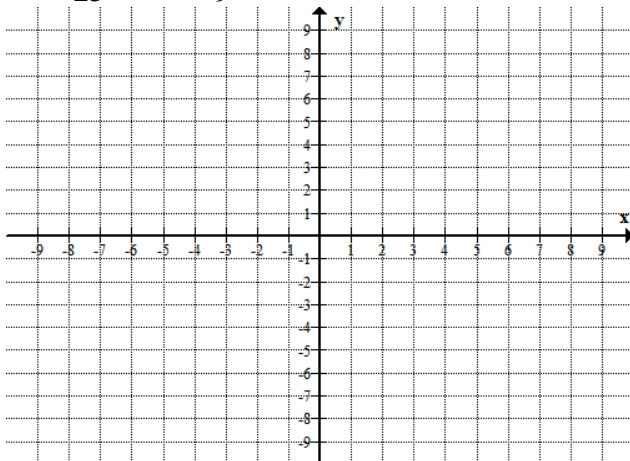
6. Graph the equation $4x^2 + 9y^2 = 36$.



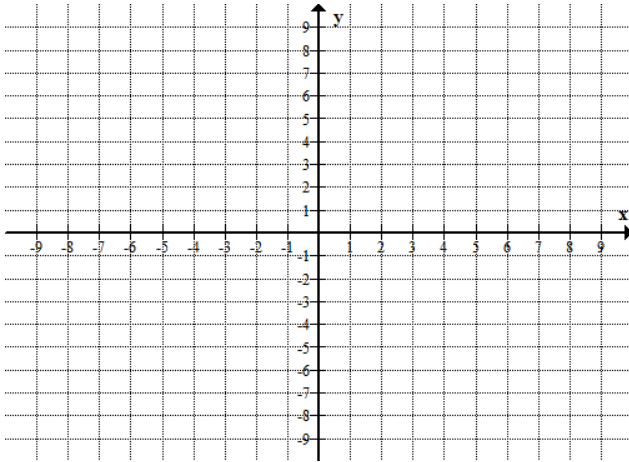
7. Find the standard equation of the ellipse with vertices (-2,0), (2,0) and a focus at (-1,0)

8. Graph the given equations. Find the coordinates of the center, foci and vertices.

a) $\frac{(x-3)^2}{25} + \frac{(y+4)^2}{9} = 1$



b) $4x^2 + y^2 + 8x - 6y - 3 = 0$



9. Find the standard equation of the ellipse with vertices at $(2,5)$, $(2, -1)$ and a focus at $(2,2)$

10. Find the standard equation of the ellipse with center at $(-3,2)$, focus at $(-3,4)$ and the major axis of length 10.

11. Assume $r > 0$. Consider the ellipses $\frac{x^2}{9+r} + \frac{y^2}{r} = 1$. Do these ellipses have the major axis along the x-axis or along the y axis? Find the coordinates of the foci.