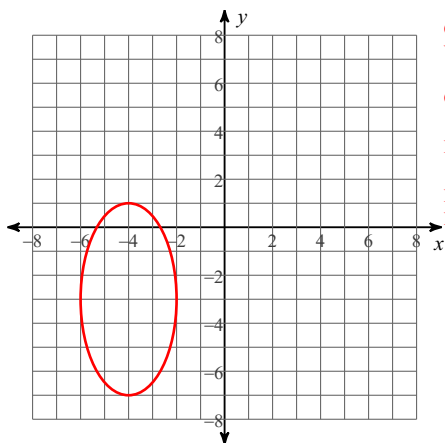


# Ellipse Practice

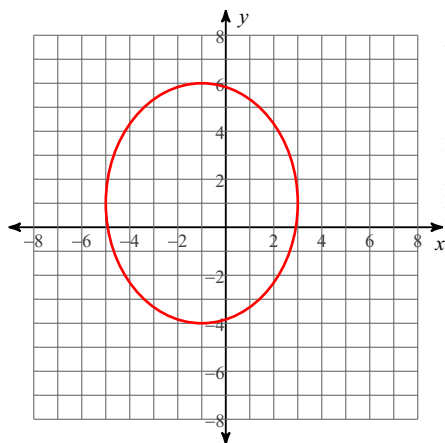
Identify the center, vertices, co-vertices, foci, length of the major axis, and length of the minor axis of each. Then sketch the graph.

1)  $\frac{(x+4)^2}{4} + \frac{(y+3)^2}{16} = 1$



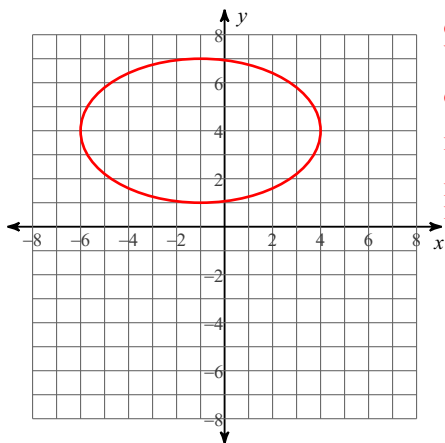
Center:  $(-4, -3)$   
 Vertices:  $(-4, 1)$   
 $(-4, -7)$   
 Co-vertices:  $(-2, -3)$   
 $(-6, -3)$   
 Foci:  $(-4, -3 + 2\sqrt{3})$   
 $(-4, -3 - 2\sqrt{3})$   
 Major Axis: 8 units  
 Minor Axis: 4 units

2)  $\frac{(x+1)^2}{16} + \frac{(y-1)^2}{25} = 1$



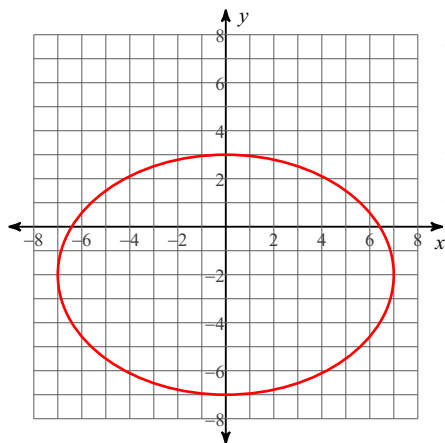
Center:  $(-1, 1)$   
 Vertices:  $(-1, 6)$   
 $(-1, -4)$   
 Co-vertices:  $(3, 1)$   
 $(-5, 1)$   
 Foci:  $(-1, 4)$   
 $(-1, -2)$   
 Major Axis: 10 units  
 Minor Axis: 8 units

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



Center:  $(-1, 4)$   
 Vertices:  $(4, 4)$   
 $(-6, 4)$   
 Co-vertices:  $(-1, 7)$   
 $(-1, 1)$   
 Foci:  $(3, 4)$   
 $(-5, 4)$   
 Major Axis: 10 units  
 Minor Axis: 6 units

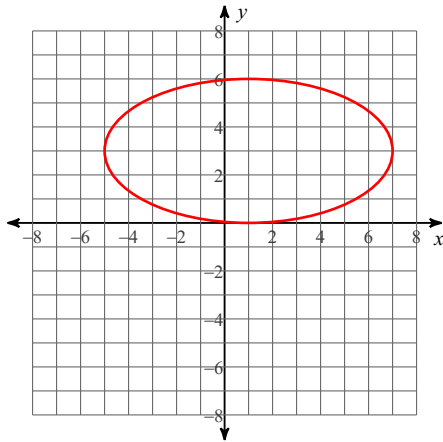
4)  $\frac{x^2}{49} + \frac{(y+2)^2}{25} = 1$



Center:  $(0, -2)$   
 Vertices:  $(7, -2)$   
 $(-7, -2)$   
 Co-vertices:  $(0, 3)$   
 $(0, -7)$   
 Foci:  $(2\sqrt{6}, -2)$   
 $(-2\sqrt{6}, -2)$   
 Major Axis: 14 units  
 Minor Axis: 10 units

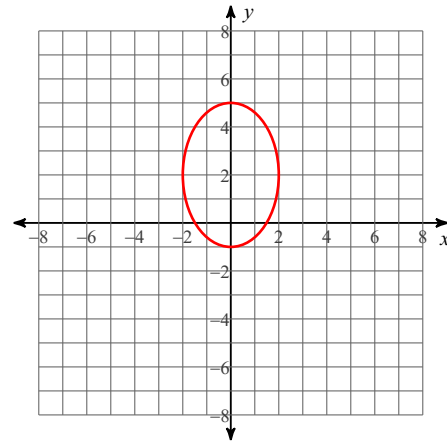
Identify the center, vertices, co-vertices, length of the major axis, and length of the minor axis of each. Then sketch the graph.

5)  $x^2 + 4y^2 - 2x - 24y + 1 = 0$



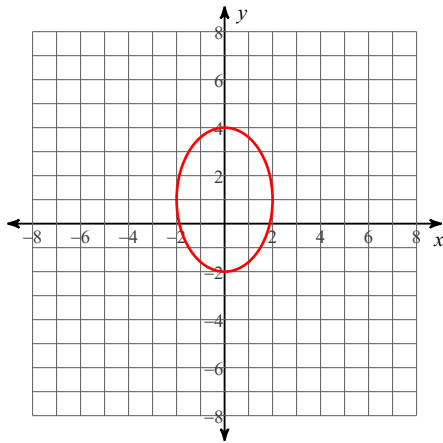
Center: (1, 3)  
 Vertices: (7, 3)  
 (-5, 3)  
 Co-vertices: (1, 6)  
 (1, 0)  
 Major Axis: 12 units  
 Minor Axis: 6 units

6)  $9x^2 + 4y^2 - 16y - 20 = 0$



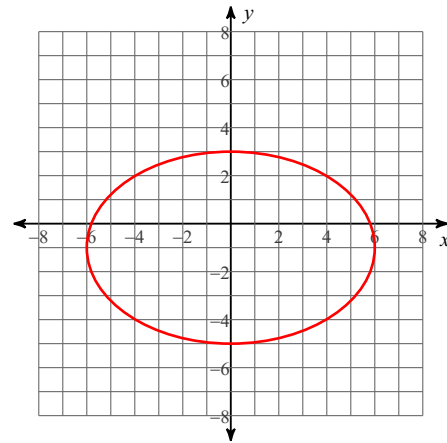
Center: (0, 2)  
 Vertices: (0, 5)  
 (0, -1)  
 Co-vertices: (2, 2)  
 (-2, 2)  
 Major Axis: 6 units  
 Minor Axis: 4 units

7)  $9x^2 + 4y^2 - 8y - 32 = 0$



Center: (0, 1)  
 Vertices: (0, 4)  
 (0, -2)  
 Co-vertices: (2, 1)  
 (-2, 1)  
 Major Axis: 6 units  
 Minor Axis: 4 units

8)  $4x^2 + 9y^2 + 18y - 135 = 0$



Center: (0, -1)  
 Vertices: (6, -1)  
 (-6, -1)  
 Co-vertices: (0, 3)  
 (0, -5)  
 Major Axis: 12 units  
 Minor Axis: 8 units