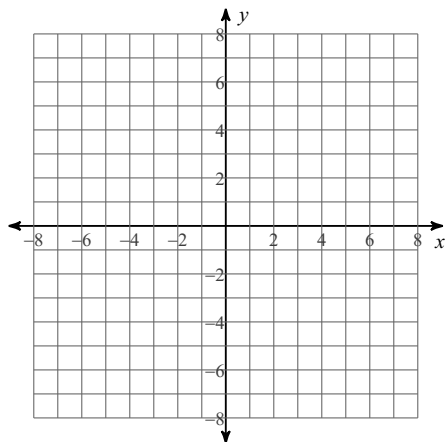


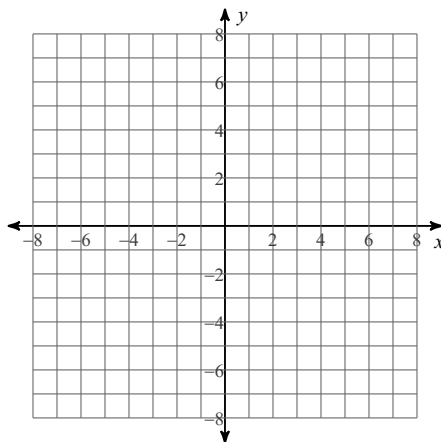
Conic Sections - The ELLIPSE

Identify the center, vertices, and co-vertices of each. Then sketch the graph.

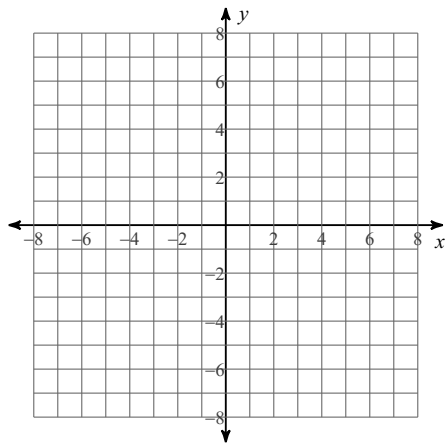
1) $\frac{x^2}{25} + \frac{y^2}{9} = 1$



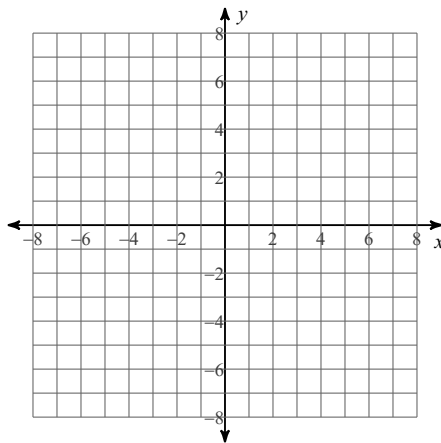
2) $\frac{x^2}{4} + \frac{y^2}{9} = 1$



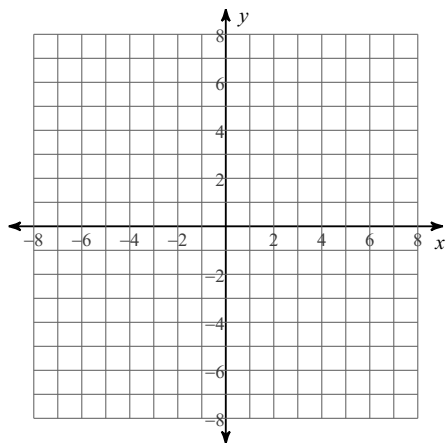
3) $\frac{(x+3)^2}{16} + \frac{(y-2)^2}{25} = 1$



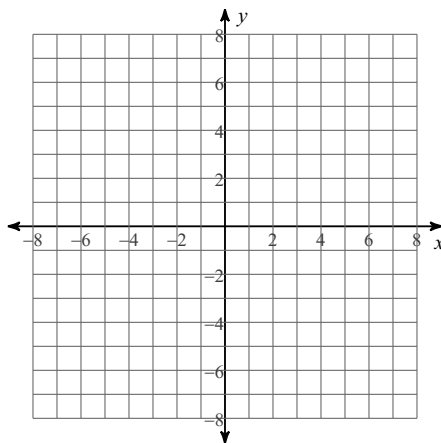
4) $(x+2)^2 + \frac{(y-5)^2}{4} = 1$



5) $\frac{x^2}{40} + \frac{(y-3)^2}{15} = 1$

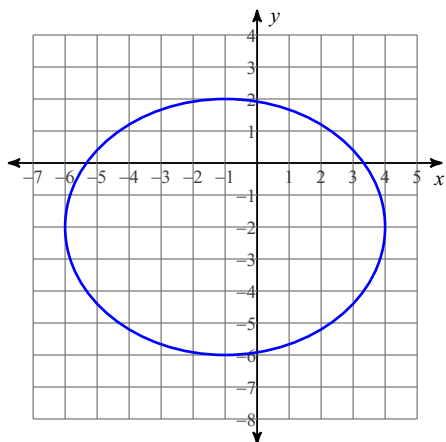


6) $\frac{x^2}{45} + \frac{(y+1)^2}{30} = 1$

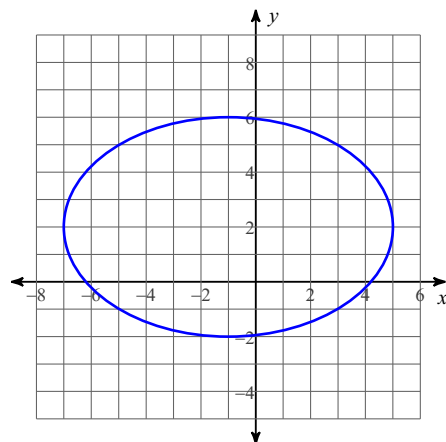


Use the information provided to write the standard form equation of each ellipse.

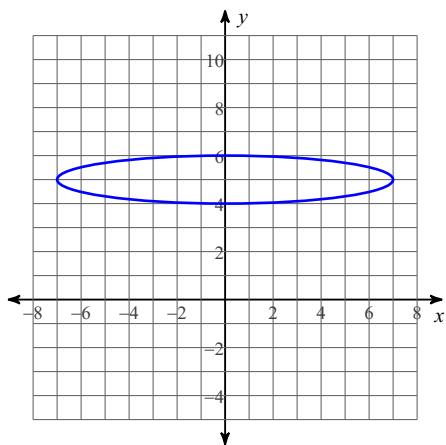
7)



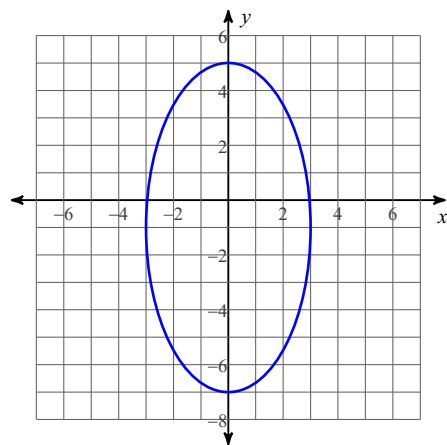
8)



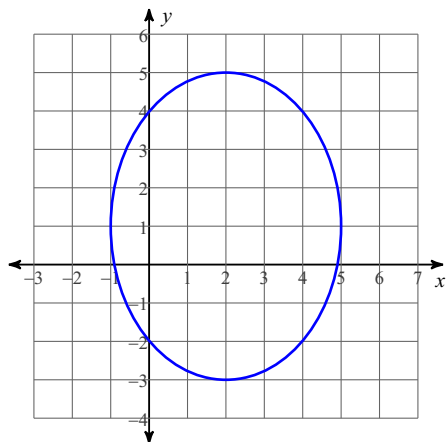
9)



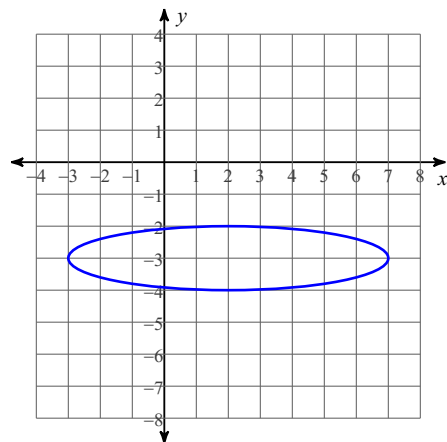
10)



11)

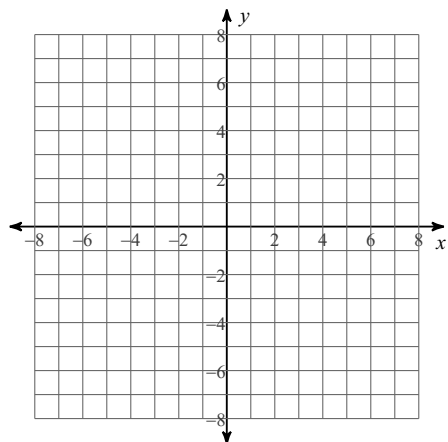


12)

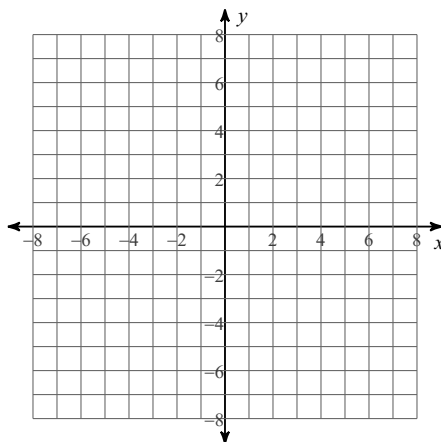


Identify the center, vertices, and co-vertices of each. Then sketch the graph.

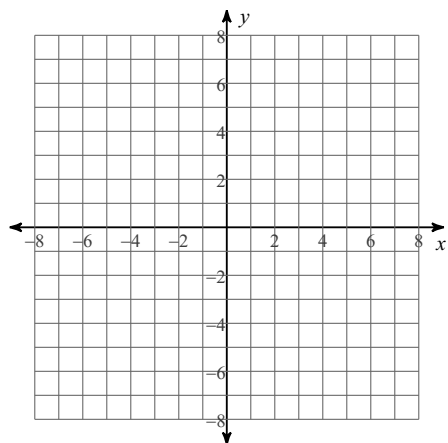
13) $x^2 + 4y^2 - 16 = 0$



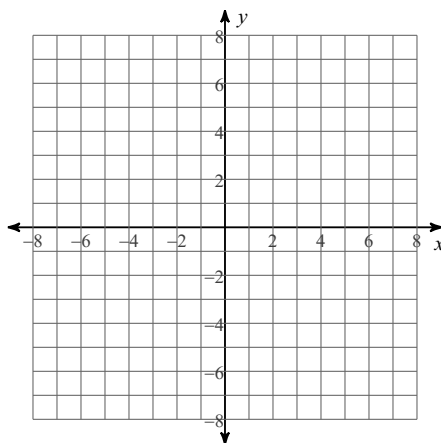
14) $9x^2 + y^2 - 36 = 0$



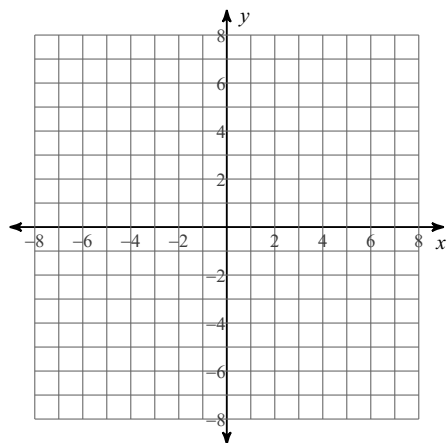
15) $4x^2 + 9y^2 - 144 = 0$



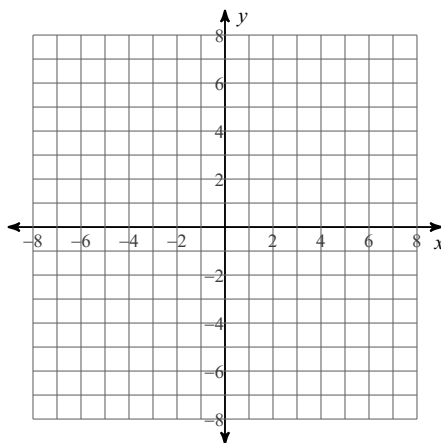
16) $25x^2 + 16y^2 - 400 = 0$



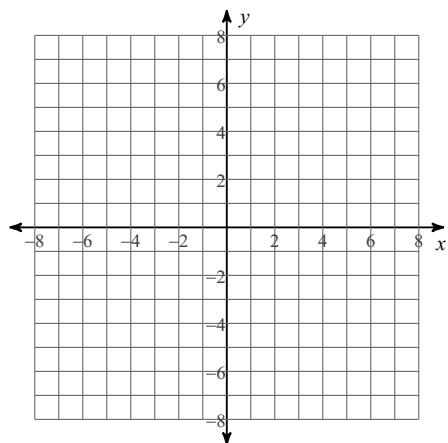
17) $x^2 + 49y^2 - 49 = 0$



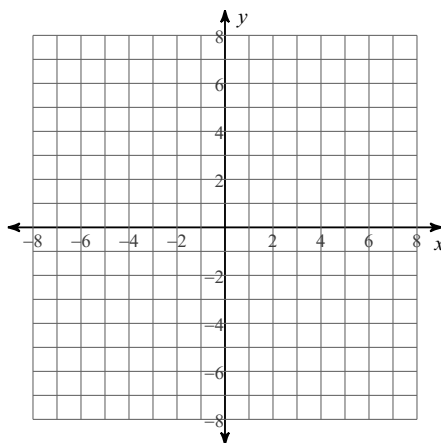
18) $16x^2 + 49y^2 - 784 = 0$



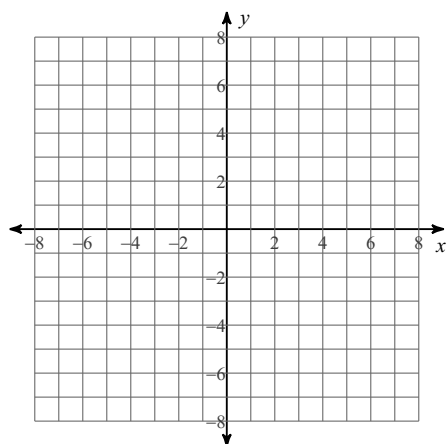
$$19) 4x^2 + y^2 - 16x + 2y - 19 = 0$$



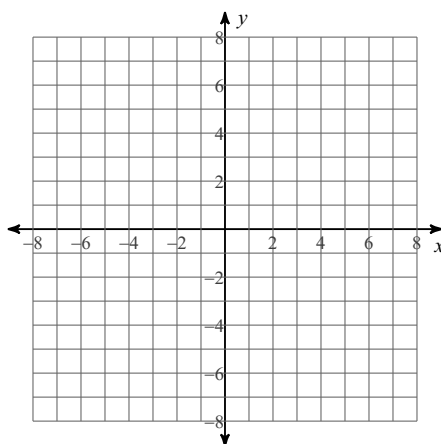
$$20) 4x^2 + 25y^2 + 150y + 125 = 0$$



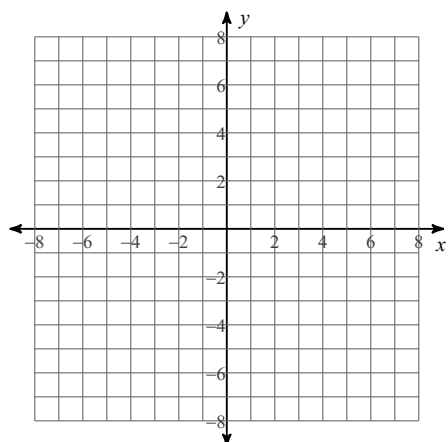
$$21) 9x^2 + y^2 + 72x + 108 = 0$$



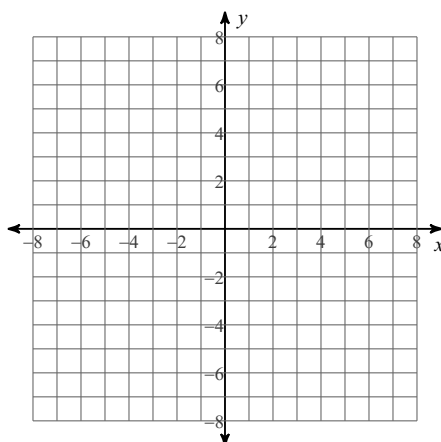
$$22) 4x^2 + 49y^2 - 392y + 588 = 0$$



$$23) 9x^2 + 16y^2 + 54x + 96y + 81 = 0$$

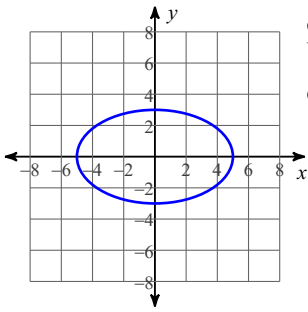


$$24) x^2 + 9y^2 + 2x - 72y + 109 = 0$$



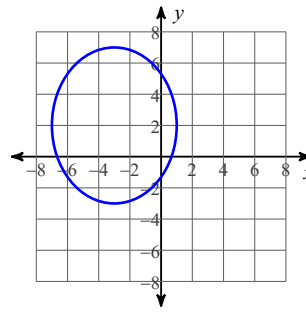
Answers to Conic Sections - The ELLIPSE (ID: 1)

1)



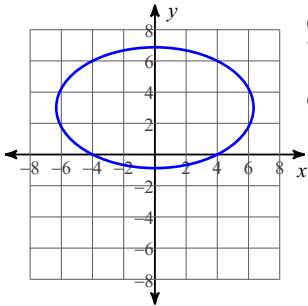
Center: $(0, 0)$
 Vertices: $(5, 0)$
 $(-5, 0)$
 Co-vertices: $(0, 3)$
 $(0, -3)$

3)



Center: $(-3, 2)$
 Vertices: $(-3, 7)$
 $(-3, -3)$
 Co-vertices: $(1, 2)$
 $(-7, 2)$

5)



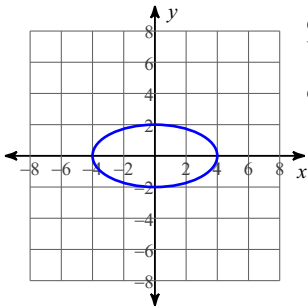
Center: $(0, 3)$
 Vertices: $(2\sqrt{10}, 3)$
 $(-2\sqrt{10}, 3)$
 Co-vertices: $(0, 3 + \sqrt{15})$
 $(0, 3 - \sqrt{15})$

7)
$$\frac{(x+1)^2}{25} + \frac{(y+2)^2}{16} = 1$$

9)
$$\frac{x^2}{49} + (y-5)^2 = 1$$

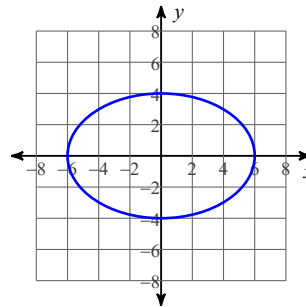
11)
$$\frac{(x-2)^2}{9} + \frac{(y-1)^2}{16} = 1$$

13)



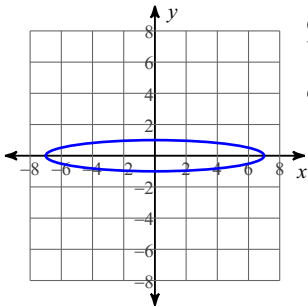
Center: $(0, 0)$
 Vertices: $(4, 0)$
 $(-4, 0)$
 Co-vertices: $(0, 2)$
 $(0, -2)$

15)



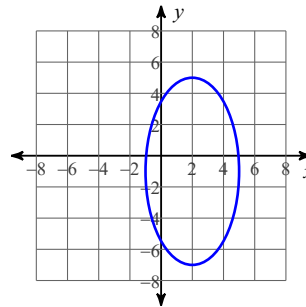
Center: $(0, 0)$
 Vertices: $(6, 0)$
 $(-6, 0)$
 Co-vertices: $(0, 4)$
 $(0, -4)$

17)



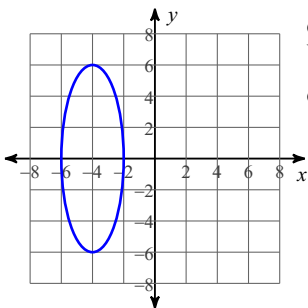
Center: $(0, 0)$
 Vertices: $(7, 0)$
 $(-7, 0)$
 Co-vertices: $(0, 1)$
 $(0, -1)$

19)



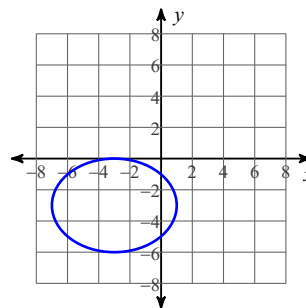
Center: $(2, -1)$
 Vertices: $(2, 5)$
 $(2, -7)$
 Co-vertices: $(5, -1)$
 $(-1, -1)$

21)



Center: $(-4, 0)$
 Vertices: $(-4, 6)$
 $(-4, -6)$
 Co-vertices: $(-2, 0)$
 $(-6, 0)$

23)



Center: $(-3, -3)$
 Vertices: $(1, -3)$
 $(-7, -3)$
 Co-vertices: $(-3, 0)$
 $(-3, -6)$