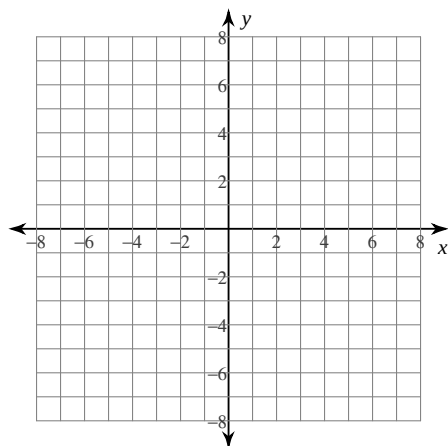


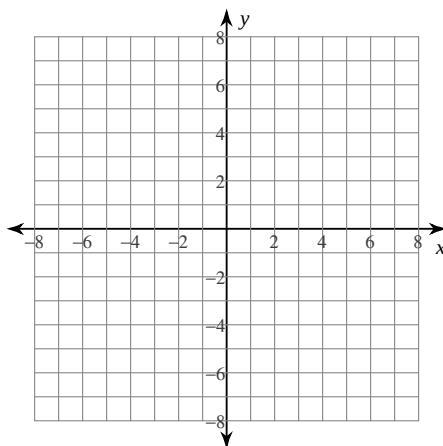
## Graphing Hyperbolas Given the Standard Equation

**Identify the vertices of each. Then sketch the graph.**

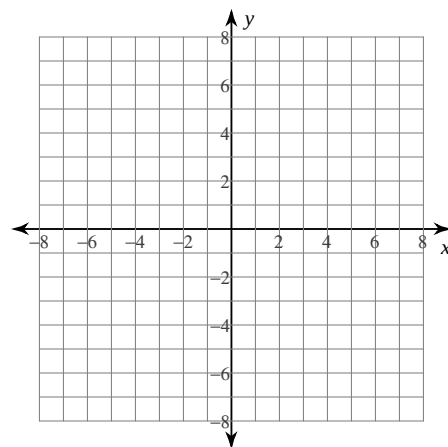
1)  $(x+1)^2 - \frac{(y-3)^2}{4} = 1$



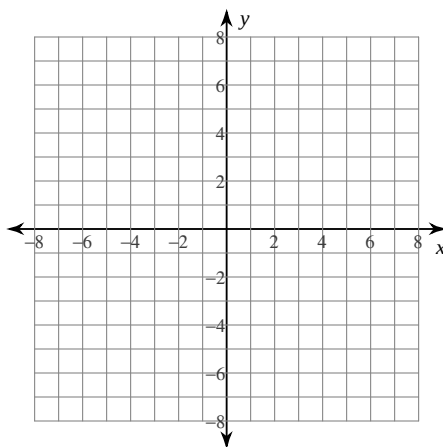
2)  $\frac{(x-1)^2}{4} - \frac{y^2}{16} = 1$



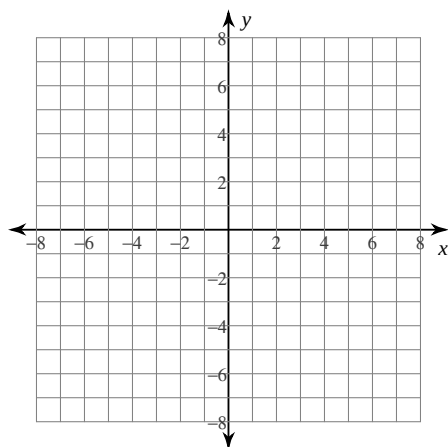
3)  $\frac{(x+1)^2}{4} - \frac{(y-2)^2}{9} = 1$



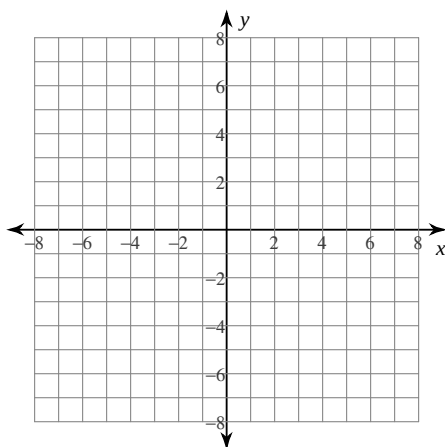
4)  $\frac{(x+1)^2}{4} - \frac{y^2}{4} = 1$



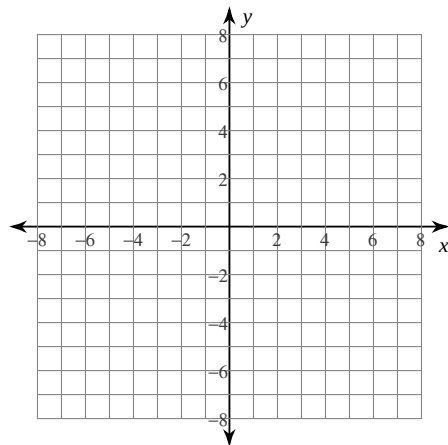
$$5) \frac{(x+2)^2}{4} - (y+2)^2 = 1$$



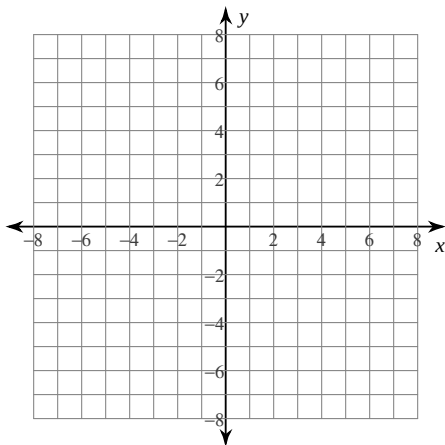
$$6) \frac{(y-2)^2}{9} - \frac{(x-2)^2}{9} = 1$$



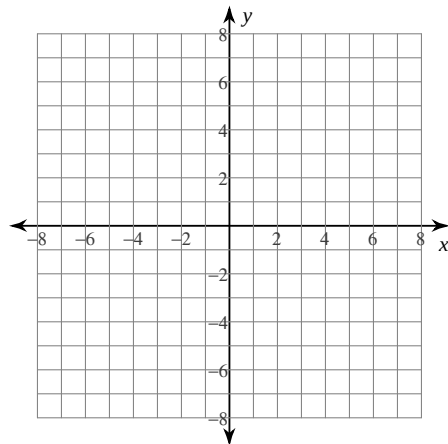
$$7) \frac{y^2}{16} - \frac{(x+1)^2}{16} = 1$$



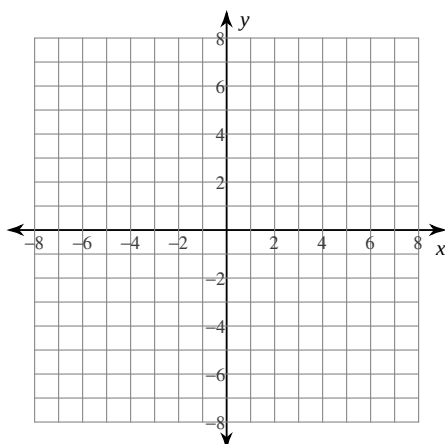
$$8) \frac{(x-2)^2}{9} - (y+3)^2 = 1$$



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

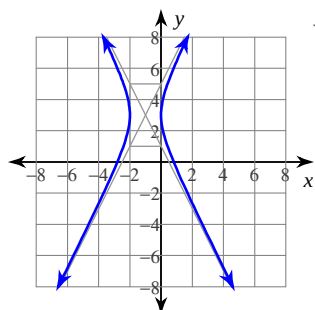


$$10) \frac{\left(x - \frac{1}{2}\right)^2}{9} - \frac{\left(y + \frac{5}{2}\right)^2}{4} = 1$$



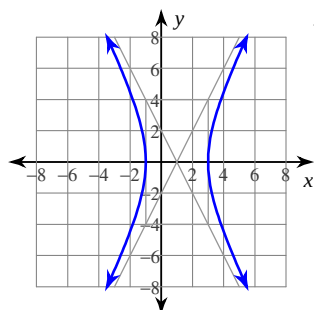
# Answers to Graphing Hyperbolas Given the Standard Equation

1)



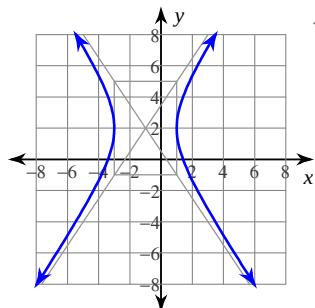
Vertices:  $(0, 3)$   
 $(-2, 3)$

2)



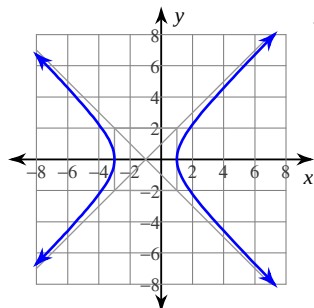
Vertices:  $(3, 0)$   
 $(-1, 0)$

3)



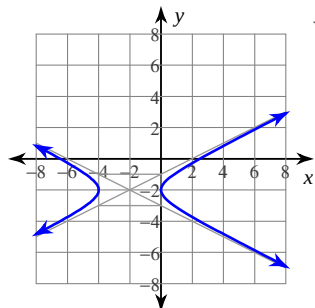
Vertices:  $(1, 2)$   
 $(-3, 2)$

4)



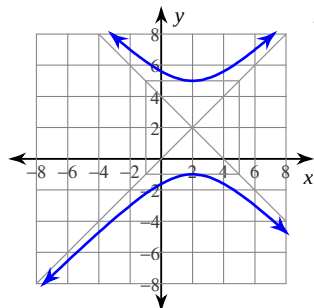
Vertices:  $(1, 0)$   
 $(-3, 0)$

5)



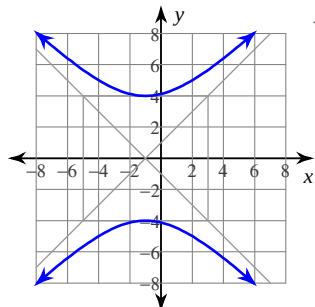
Vertices:  $(0, -2)$   
 $(-4, -2)$

6)



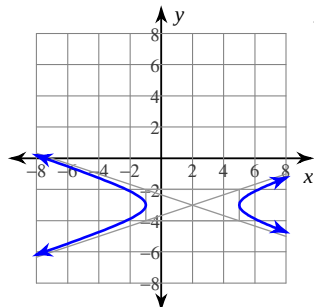
Vertices:  $(2, 5)$   
 $(2, -1)$

7)



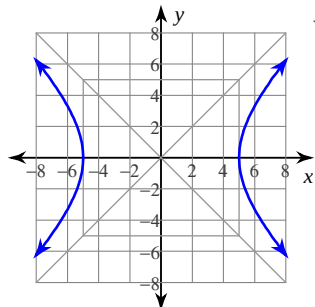
Vertices:  $(-1, 4)$   
 $(-1, -4)$

8)



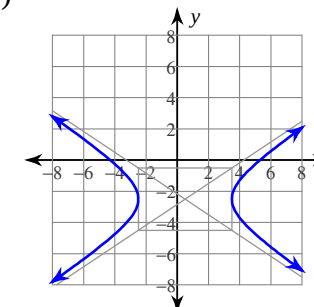
Vertices:  $(5, -3)$   
 $(-1, -3)$

9)



Vertices:  $(5, 0)$   
 $(-5, 0)$

10)



Vertices:  $\left(\frac{7}{2}, -\frac{5}{2}\right)$   
 $\left(-\frac{5}{2}, -\frac{5}{2}\right)$