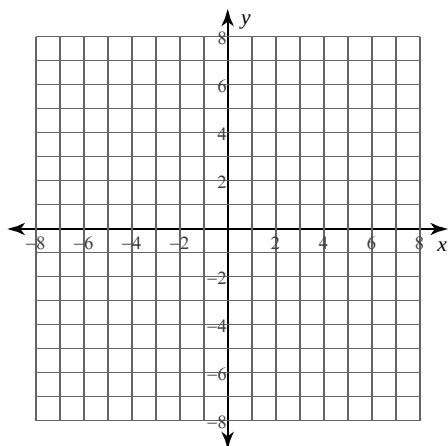
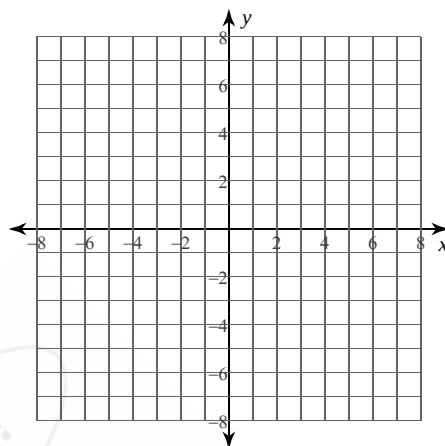


Identify the vertices and foci of each. Then sketch the graph.

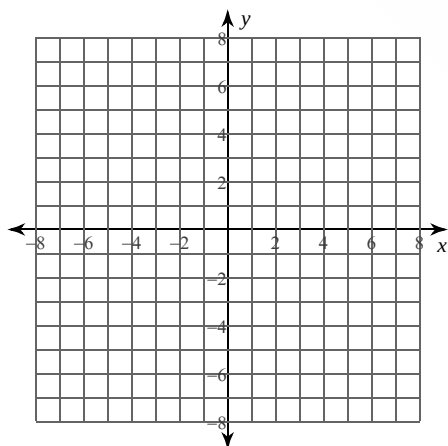
1) $\frac{y^2}{4} - x^2 = 1$



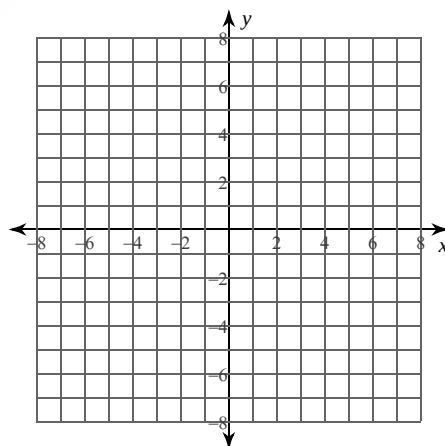
2) $\frac{y^2}{4} - \frac{x^2}{25} = 1$



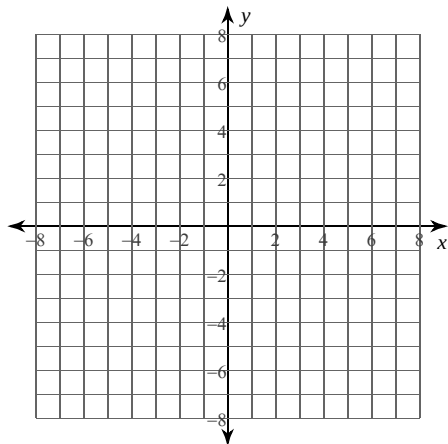
3) $\frac{y^2}{5} - \frac{x^2}{10} = 1$



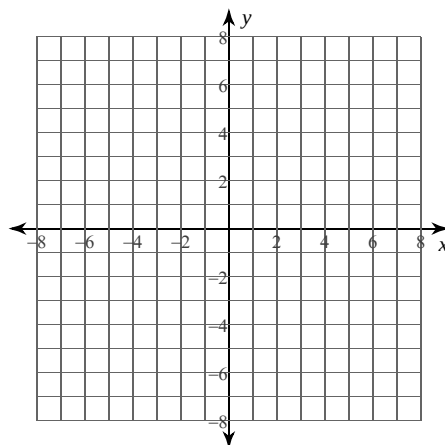
4) $y^2 - \frac{x^2}{16} = 1$



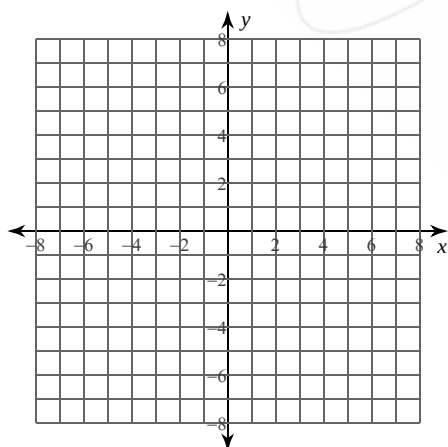
$$5) \frac{(x-1)^2}{16} - \frac{y^2}{25} = 1$$



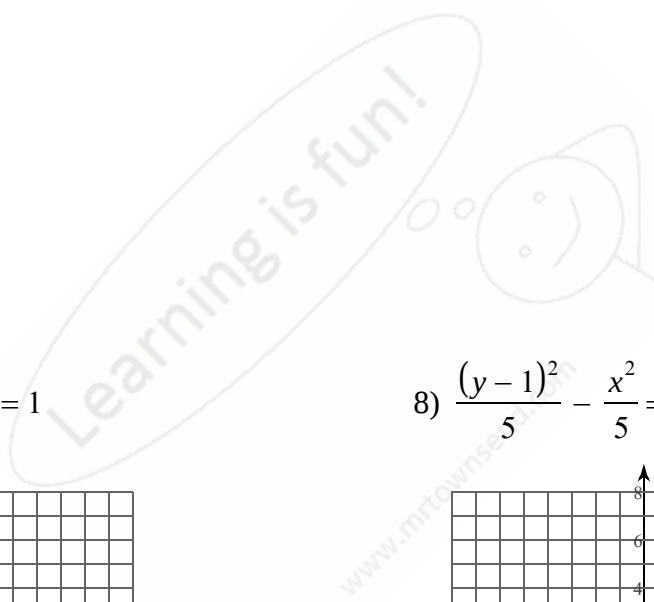
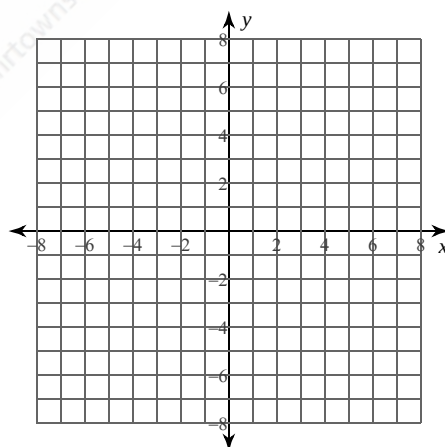
$$6) (x+3)^2 - (y-4)^2 = 1$$



$$7) \frac{(y+2)^2}{9} - (x+3)^2 = 1$$

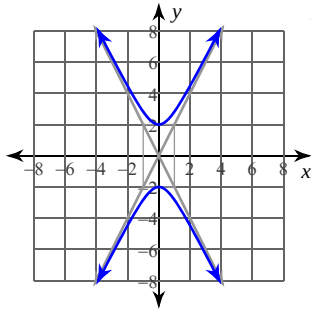


$$8) \frac{(y-1)^2}{5} - \frac{x^2}{5} = 1$$



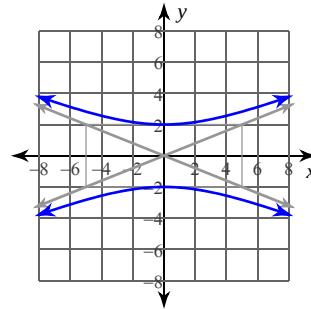
Answers to

1)



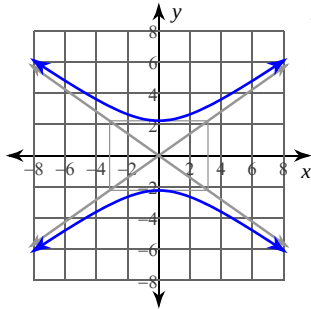
Vertices: $(0, 2)$
 $(0, -2)$
 Foci: $(0, \sqrt{5})$
 $(0, -\sqrt{5})$

2)



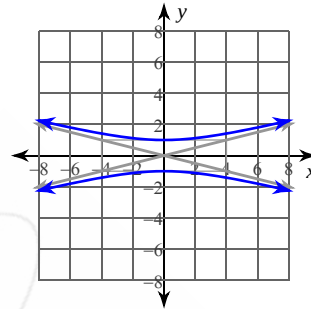
Vertices: $(0, 2)$
 $(0, -2)$
 Foci: $(0, \sqrt{29})$
 $(0, -\sqrt{29})$

3)



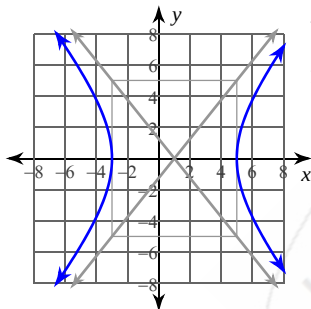
Vertices: $(0, \sqrt{5})$
 $(0, -\sqrt{5})$
 Foci: $(0, \sqrt{15})$
 $(0, -\sqrt{15})$

4)



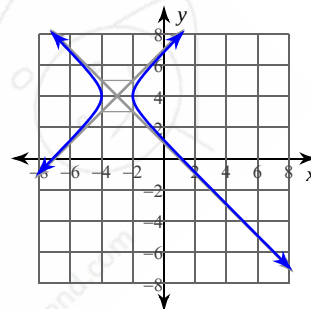
Vertices: $(0, 1)$
 $(0, -1)$
 Foci: $(0, \sqrt{17})$
 $(0, -\sqrt{17})$

5)



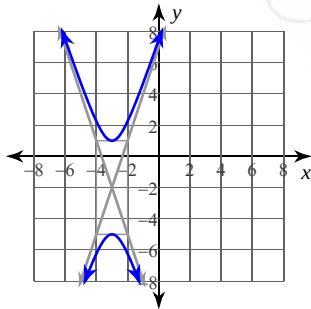
Vertices: $(5, 0)$
 $(-3, 0)$
 Foci: $(1 + \sqrt{41}, 0)$
 $(1 - \sqrt{41}, 0)$

6)



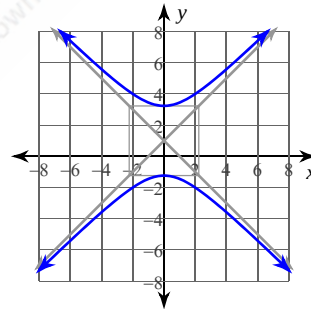
Vertices: $(-2, 4)$
 $(-4, 4)$
 Foci: $(-3 + \sqrt{2}, 4)$
 $(-3 - \sqrt{2}, 4)$

7)



Vertices: $(-3, 1)$
 $(-3, -5)$
 Foci: $(-3, -2 + \sqrt{10})$
 $(-3, -2 - \sqrt{10})$

8)



Vertices: $(0, 1 + \sqrt{5})$
 $(0, 1 - \sqrt{5})$
 Foci: $(0, 1 + \sqrt{10})$
 $(0, 1 - \sqrt{10})$