EXTRA PRACTICE — Exercises

Unit IX – The Conic Sections
Part D – Hyperbolas
Lesson 2 – Hyperbolas - Not Standard Form

Graph the solution set hyperbola for each of the following second-degree equations by using the standard form, if possible, to identify the center, the rectangle of reference with its diagonals, and the vertices. If the standard form cannot be used, sketch the graph by finding a sufficient number of solution points.

1. $16x^2 - 9y^2 = 144$

2. $9y^2 = 36 + 4x^2$

3. $xy = 12$

4. $9x^2 - 4y^2 - 36x + 24y - 36 = 0$

5. $xy = -8$

EXTRA PRACTICE — Answer Key

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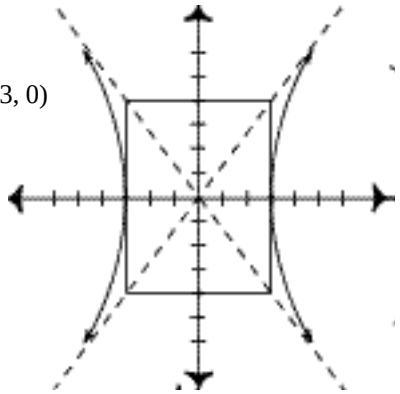
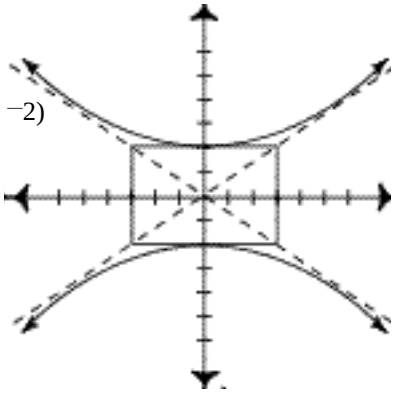
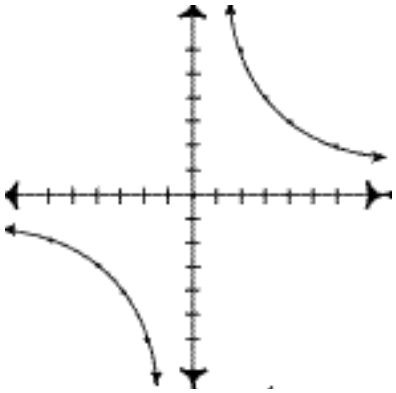
1. center (0,0)
   a = 3 , b = 4
   vertices: (3, 0) and (−3, 0)



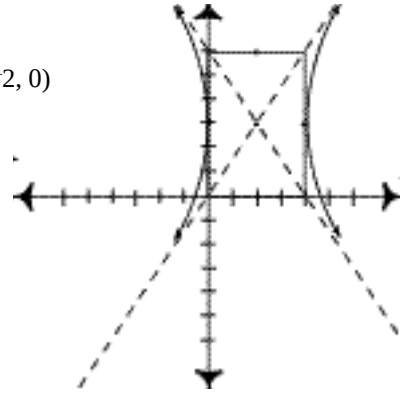
2. center (0, 0)
   a = 2 , b = 3
   vertices: (0, 2) and (0, −2)



3. center (0,0)



4. center (2, 3)
   a = 2 , b = 3
   vertices: (2, 0) and (−2, 0)



5. center (0, 0)