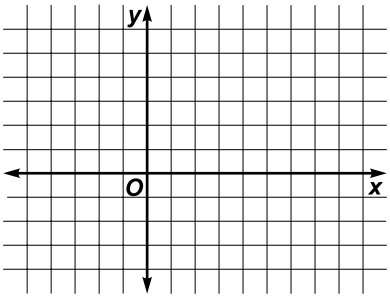
10-4

Practice

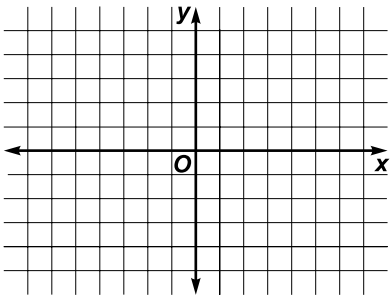
Hyperbolas

For each equation, find the coordinates of the center, foci, and vertices, and the equations of the asymptotes of its graph. Then graph the equation.

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

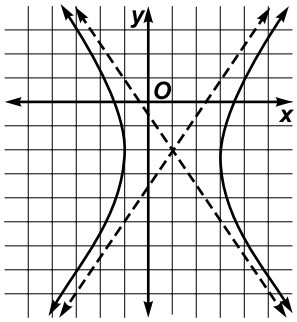


2. $y^2 - 4x^2 + 8x = 20$

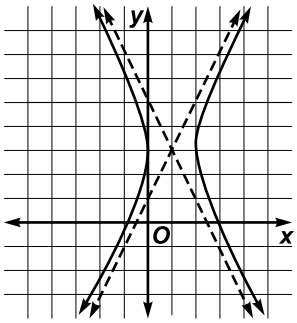


Write the equation of each hyperbola.

3.



4.



5. Write an equation of the hyperbola for which the length of the transverse axis is 8 units, and the foci are at (6, 0) and (−4, 0).

6. ***Environmental Noise*** Two neighbors who live one mile apart hear an explosion while they are talking on the telephone. One neighbor hears the explosion two seconds before the other. If sound travels at 1100 feet per second, determine the equation of the hyperbola on which the explosion was located.