Name _____ Date _____

LESSON 9.5 **Practice A**

For use with pages 642–648

Hyperbolas #2

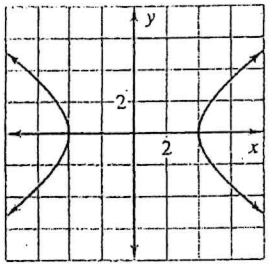
Match the equation with its graph.

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

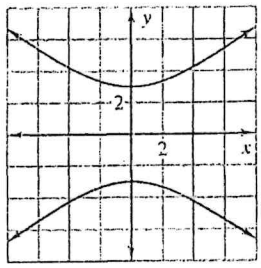
2. $\frac{x^2}{16} - \frac{y^2}{9} = 1$

3. $\frac{y^2}{9} - \frac{x^2}{16} = 1$

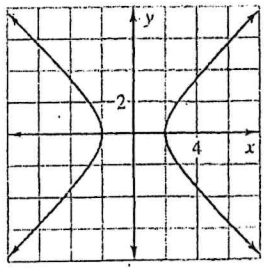
A.



B.

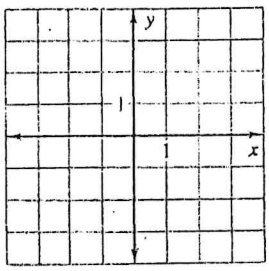


C.

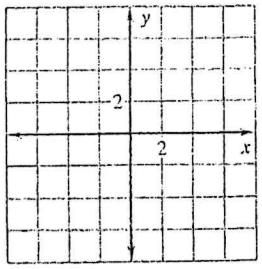


Graph the equation. Identify the vertices, foci, and asymptotes of the hyperbola.

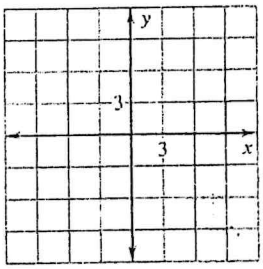
4. $\frac{x^2}{1} - \frac{y^2}{4} = 1$



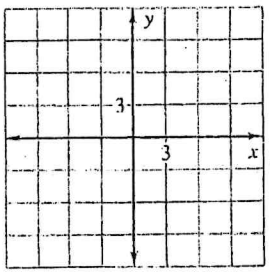
5. $\frac{x^2}{9} - \frac{y^2}{4} = 1$



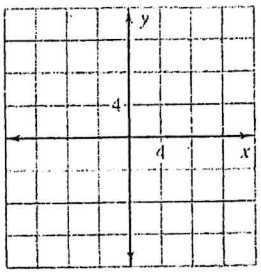
6. $\frac{y^2}{25} - \frac{x^2}{36} = 1$



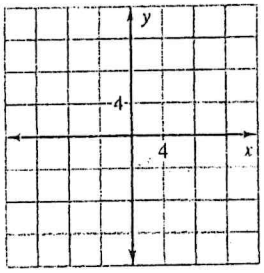
7. $\frac{y^2}{25} - \frac{x^2}{9} = 1$



8. $\frac{x^2}{49} - \frac{y^2}{64} = 1$



9. $\frac{y^2}{16} - \frac{x^2}{25} = 1$



Write an equation of the hyperbola with the given foci and vertices.

10. Foci: $(2, 0), (-2, 0)$

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

11. Foci: $(0, 5), (0, -5)$

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

12. **Photography** A hyperbolic mirror can be used to take panoramic photographs. A camera is pointed toward the vertex of the mirror and is positioned so that the lens is at the other focus of the mirror. An equation for the cross section of the mirror is $\frac{x^2}{16} - \frac{y^2}{4} = 1$ where x and y are measured in inches. How far from the mirror is the lens? Round your answer to two decimal places.