Name _____ Date _____ Class _____

LESSON 10-4

Practice B

Hyperbolas

Find the constant difference for a hyperbola with the given foci and point on the hyperbola.

1. $F_1(0, 11)$, $F_2(0, -11)$, $P(0, 7)$

2. $F_1(-9, 0)$, $F_2(9, 0)$, $P(-8, 0)$

Write an equation in standard form for each hyperbola with center (0, 0).

3. Co-vertex (–16, 0), focus (0, –20)

4. Vertex (24, 0), focus (–25, 0)

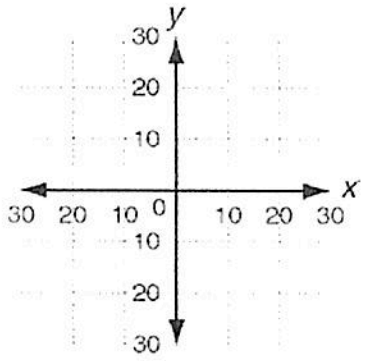
5. Vertex (0, –17), co-vertex (1, 0)

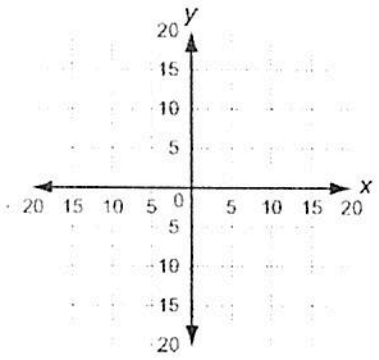
6. Vertex (30, 0), focus (–40, 0)

Find the vertices, co-vertices, and asymptotes of each hyperbola, and then graph.

7. $\frac{x^2}{196} - \frac{y^2}{49} = 1$

8. $\frac{(y-4)^2}{36} - \frac{x^2}{81} = 1$





Solve.

9. A comet's path as it approaches the sun is modeled by one branch of the hyperbola $\frac{y^2}{1122} - \frac{x^2}{39{,}355} = 1$, where the sun is at the corresponding focus. Each unit of the coordinate plane represents one million miles. How close does the comet come to the sun?