Name

12-6A Lesson Master

Questions on SPUR Objectives
See Student Edition pages 862–865 for objectives.

SKILLS Objective B

In 1–3, write an equation for a hyperbola satisfying the given conditions.

1. The vertices are (3, 0) and (–3, 0) and the asymptotes are $y = \pm\frac{2}{3}x$. _____

2. The vertices are (–12, 0) and (12, 0) and the foci are (–15, 0) and (15, 0). _____

3. The vertices are (5, 0) and (–5, 0) and the point (10, 3) is on the hyperbola. _____

PROPERTIES Objective E

In 4 and 5, an equation for a hyperbola is given. Name a. its vertices, b. its asymptotes, and c. its foci.

4. $\frac{x^2}{6^2} - \frac{y^2}{3^2} = 1$

   a. _____

   b. _____

   c. _____

5. $\frac{x^2}{121} - \frac{y^2}{25} = 1$

   a. _____

   b. _____

   c. _____

PROPERTIES Objective F

In 6–8, given points *G* and *H* and a line ℓ, determine whether the figure described is a *hyperbola*, an *ellipse*, or a *parabola*.

6. The set of all points P where $PG + PH$ is constant. _____

7. The set of all points P where $PG - PH$ is constant. _____

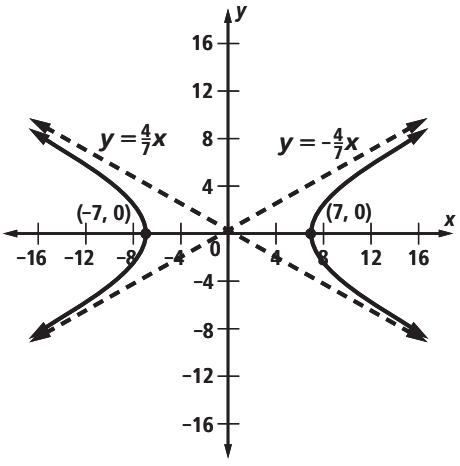
8. The set of all points P where the distance from P to ℓ is equal to the distance PG. _____

Name

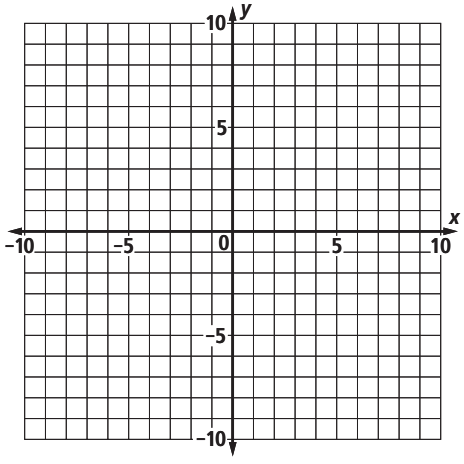
12-6A page 2

REPRESENTATIONS Objective I

11. Write an equation for the hyperbola graphed below.



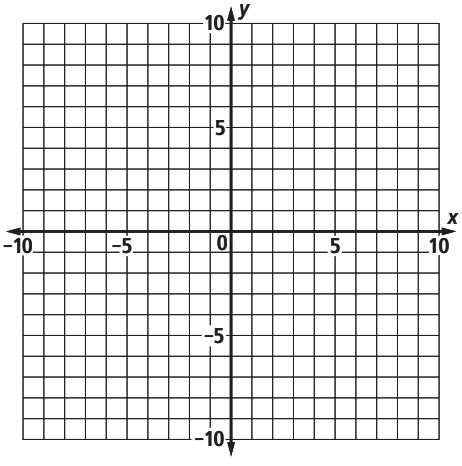
12. Graph the hyperbola $\frac{x^2}{25} - \frac{y^2}{16} = 1$ below. Label the vertices and asymptotes on your graph.



REPRESENTATIONS Objective L

In 13 and 14, graph the hyperbola described and its asymptotes below each question.

13. The vertices are (3, 0) and (-3, 0) the asymptotes are $y = \pm\frac{4}{3}x$.



14. The focal constant is 10 and the foci are (6, 0) and (-6, 0).