Name

12-4A Lesson Master

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

SKILLS Objective B

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

1. The endpoints of the major and minor axes are (12, 0), (–12, 0), (0, 9), and (0, –9). _____

2. The endpoints of the major axes are $(u, 0)$ and $(-u, 0)$, and the endpoints of the minor axes are $(0, v)$ and $(0, -v)$. _____

3. The foci are at (0, 6) and (0, –6) and the focal constant is 13. _____

PROPERTIES Objective E

4. For the ellipse with equation $\frac{x^2}{81} + \frac{y^2}{121} = 1$, find

   a. the length of the major axis. _____

   b. the length of the minor axis. _____

   c. the x- and y-intercepts. _____

   d. the coordinates of the foci. _____

5. Find the focal constant of the ellipse with equation $\frac{x^2}{15} + \frac{y^2}{10} = 1$. _____

PROPERTIES Objective F

In 6–8, determine whether the figure described is a *parabola*, a *circle*, or an *ellipse*.

6. The set of all points whose distance from (x_1, y_1) is a. _____

7. The set of all points whose distances from (x_1, y_1) and (x_2, y_2) sum to a. _____

8. The set of all points whose distances from (x_1, y_1) and $y = k$ are equal. _____

USES Objective G

9. The orbit of the Moon around Earth is an ellipse with major axis 384,400 km long and minor axis 383,800 km long. Give an equation for the Moon's orbit. _____

10. The green of a miniature golf hole is in the shape of an ellipse with major axis six feet long and minor axis four feet long.

    a. Give an equation for the ellipse. _____

    b. The tee and the hole are the two foci of the ellipse. How far apart are they? _____

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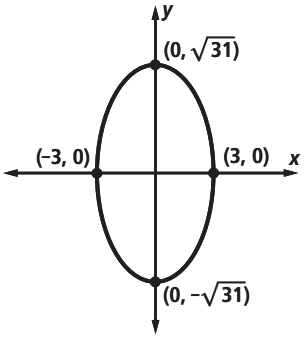
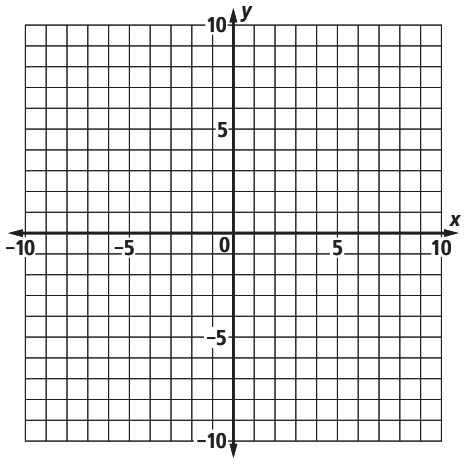
REPRESENTATIONS Objective I

11. Write an equation for the ellipse graphed at the right.

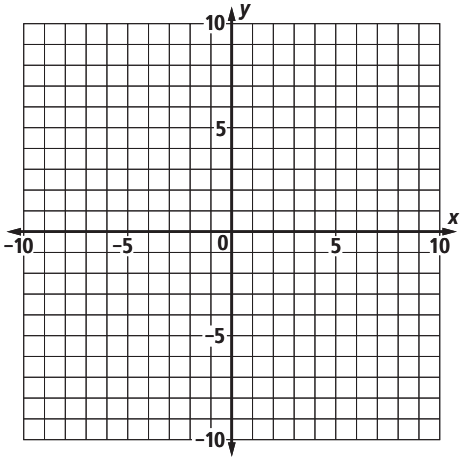


12. Graph the ellipse with equation $\frac{x^2}{49} + \frac{y^2}{25} = 1$ on the grid at the right.



REPRESENTATIONS Objective L

13. Sketch an ellipse with foci at (0, 6) and (0, –6) and minor axis length 9 below.



14. Graph the set of points whose distances from (8, 0) and (–8, 0) add to 20 below.