Name

12-5B Lesson Master

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

SKILLS Objective C

In 1–11, find the area of the given ellipse.

1. the ellipse with equation $\frac{x^2}{25} + \frac{y^2}{121} = 1$ _____
2. an ellipse with major axis 4 cm long and minor axis 3 cm long _____
3. the image of the unit circle under $S_{5,6}$ _____
4. the ellipse with equation $\frac{x^2}{100} + \frac{y^2}{700} = 1$ _____
5. the ellipse with equation $\frac{x^2}{169} + \frac{y^2}{324} = 1$ _____
6. an ellipse with major axis 1.5 m long and minor axis 7 m long _____
7. an ellipse with major axis 4 yd long and minor axis 3 yd long _____
8. the image of the unit circle under $S_{0.4,2.1}$ _____
9. The endpoints of its major and minor axes are (0, 3) and (0, –3), and (1.5, 0) and (–1.5, 0). _____
10. It has foci (0, 5) and (0, –5) and focal constant 14. _____
11. It has foci (–2, 0) and (2, 0) and minor axis length 6. _____

PROPERTIES Objective F

In 12–14, under what condition(s) is the described set of points not a circle?

12. the image of the unit circle under $S_{a,b}$ _____
13. the set of all points P, where the sum $PF_1 + PF_2$ is constant _____
14. an ellipse with major axis length of $2a$ and minor axis length of $2b$ _____
15. Explain the relationship between the area formula for a circle, $A = \pi r^2$, and the area formula for an ellipse, $A = \pi ab$.

_____

_____

True or False In 16–20, decide whether each statement is true or false.

16. If a figure has two distinct foci, it is a circle. _____
17. If a figure is a circle, it has two distinct foci. _____
18. If a figure is an ellipse, its major and minor axes have different lengths. _____
19. If a figure is a circle, its major and minor axes have the same length. _____

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20. If an ellipse is not a circle, it has congruent major and minor axes. _____

USES Objective G

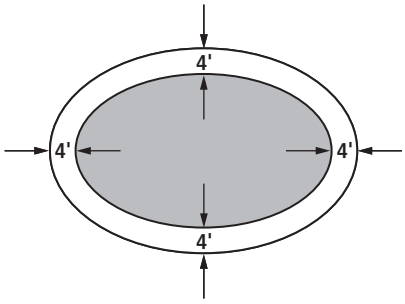
21. A jewel shaped like an ellipse is also set on a band in the shape of an ellipse. The jewel has major axis 4 mm long and minor axis 3 mm long. The setting has a major axis 6 mm long and a minor axis 4 mm long. What percent of the setting is covered by the jewel?

_____

22. A mirror shaped like an ellipse has a major axis 14 in. long and a minor axis 9 in long. Find the area of the mirror.

_____

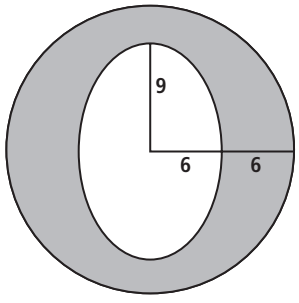
23. A pond shaped like an ellipse is bordered by a 4-ft wide walkway as shown at the right. The walkway is bordered by a fence shaped like an ellipse. The major and minor axes of the fence are 48 ft and 32 ft long.



a. Find the area of the pond. _____

b. Find the area of the walkway. _____

24. Marie designs a new logo for her company as shown at the right. Find the area of the shaded region between the circle and ellipse with the same center.



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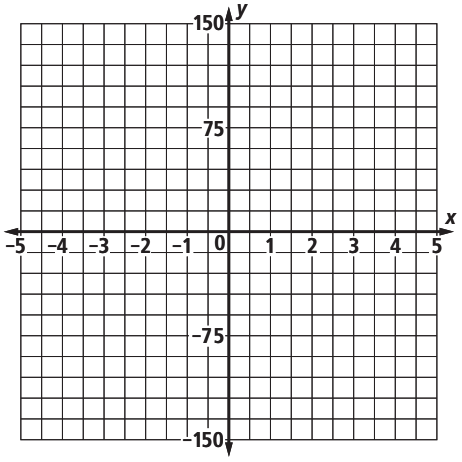
REVIEW Lesson 2-6, Objectives E and I

25. Consider the equation $y = \frac{24}{x}$.

a. What type of variation is described by the equation?

_____

b. At the right, sketch the graph of the equation on $-5 \le x \le 5$ and $-150 \le y \le 150$.



c. What type of curve describes the graph?

_____

d. Identify all asymptotes of the graph.

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