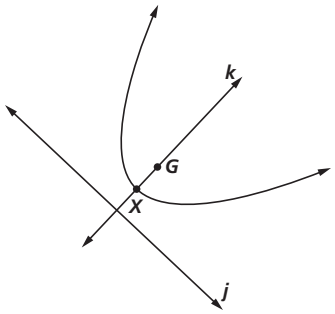
Name

12-1B Lesson Master

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

VOCABULARY

In 1 and 2, refer to the parabola at the right.



1. Identify the following.

   a. focus _____

   b. directrix _____

   c. vertex _____

   d. axis of symmetry _____

2. Explain what is true about all the points on the parabola.

_____

_____

_____

SKILLS Objective B

In 3–9, write an equation for the parabola with the given focus and directrix.

3. focus $(0, -4)$; directrix $y = 4$ _____
4. focus $(0, 3)$; directrix $y = -3$ _____
5. focus $(0, 7)$; directrix $y = -7$ _____
6. focus $(0, 1)$; directrix $y = -1$ _____
7. focus $(0, -5)$; directrix $y = 5$ _____
8. focus $(0, -8)$; directrix $y = 8$ _____
9. focus $(0, -2)$; directrix $y = 2$ _____

PROPERTIES Objective E

In 10–14, the equation of a parabola is given. Find the coordinates of the focus and vertex and an equation for the directrix.

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

    focus: _____ vertex: _____ directrix: _____

11. $y = 9x^2$

    focus: _____ vertex: _____ directrix: _____

12. $y = -4(x + 2)^2$

    focus: _____ vertex: _____ directrix: _____

Name

12-1B page 2

13. $y = 0.6x^2$

focus: _____ vertex: _____ directrix: _____

14. $y - 1 = -3(x + 3)^2$

focus: _____ vertex: _____ directrix: _____

15. The point $(2, \frac{1}{2})$ is on the parabola $y = \frac{1}{8}x^2$. Find the distance from $(2, \frac{1}{2})$ to

a. the point $(0, 2)$. _____ b. the line $y = -2$. _____

PROPERTIES Objective F

In 16–25, determine whether the figure described is a parabola.

16. The set of all points equidistant from $y = 2$ and $(3, 3)$. _____

17. The set of all points equidistant from $(5, 0)$ and $(1, -4)$. _____

18. The set of all points equidistant from $y = 2x + 5$ and $(1, 3)$. _____

19. The set of all points equidistant from $y = 2 - x$ and $(5, -3)$. _____

20. The set of all points equidistant from $(5, 0)$ and $y = -4$. _____

21. The set of all points equidistant from $y = -\frac{3}{7}x - 3$ and $(-1, -3)$. _____

22. The set of all points on the graph of $y = 3x^2 - 2x + 5$. _____

23. The set of all points on the graph of $y - \frac{1}{2} = \frac{3}{5}(x - 8)$. _____

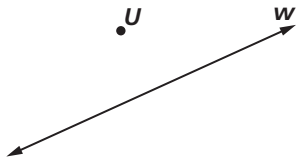
24. The set of all points on the graph of $y = 8y^2 - 2x^2 + 5^2$. _____

25. The set of all points on the graph of $y - 7 = 3(x - 8)^2$. _____

REPRESENTATIONS Objective L

In 26 and 27, sketch the parabola with the given focus and directrix.

26.



27. focus $(0, -1)$, directrix $y = 1$