

Name _____

12-1B Lesson Master

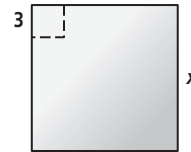
Questions on SPUR Objectives
See pages 773–775 for objectives.

USES Objective G

1. A mason cuts a square from the corner of a square ceramic tile.

a. Find a formula for the remaining area A of the tile.

b. What is the vertex of the parabola in Part a?



2. A charity organization has determined that the profit p from charging t dollars per ticket to their *Battle of the Bands* contest can be described by the equation $p - 6,050 = -15(t - 20)^2$.

a. How much should the organization charge per ticket to get the maximum profit?

b. What is the maximum profit?

3. A rectangular field is enclosed by 40 feet of fencing.

a. Find a formula for the area of the field A in terms of its length L .

b. What is the vertex of the parabola in Part a?

c. What is the meaning of the vertex in this scenario?

4. The height h of a ball in meters t seconds after it is tossed upward is described by the equation $h - 10 = -(t - 4)^2$. After how many seconds is the ball at its maximum height? What is the maximum height?

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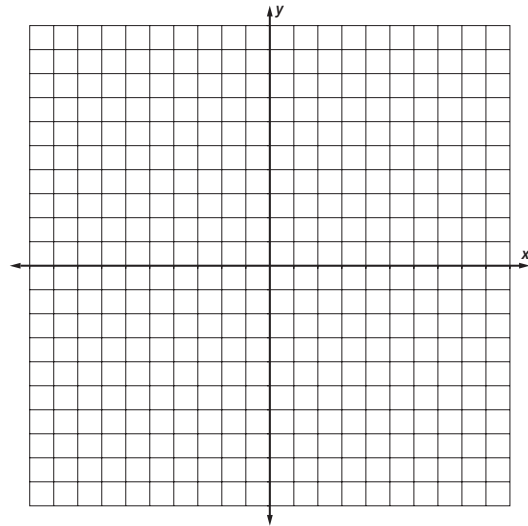
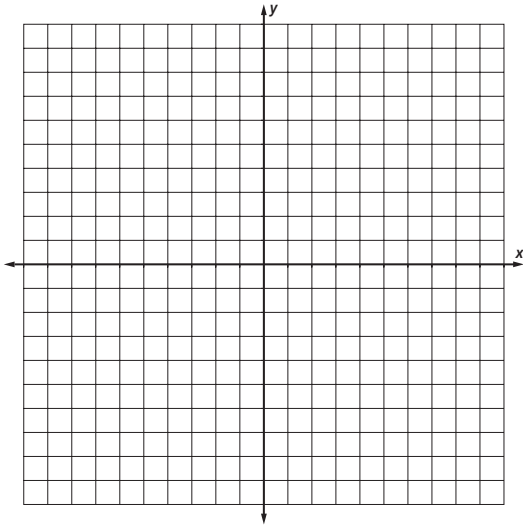
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REPRESENTATIONS Objective H

In 5 and 6, an equation of a parabola is given. Find the coordinates of its vertex and graph the equation without a calculator.

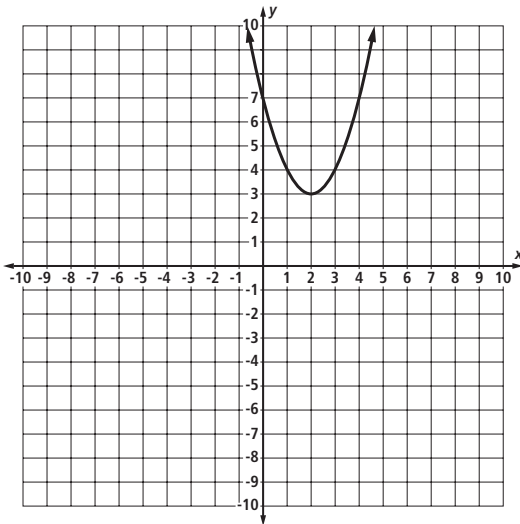
5. $y - 5 = -(x + 3)^2$

6. $y + 5 = (x - 1)^2$



In 7 and 8, a parabola is given. Write an equation of the parabola in the form $y - k = a(x - h)^2$. Assume $|a| = 1$.

7.



8.

