

Name _____

6-6A Lesson Master

Questions on SPUR Objectives

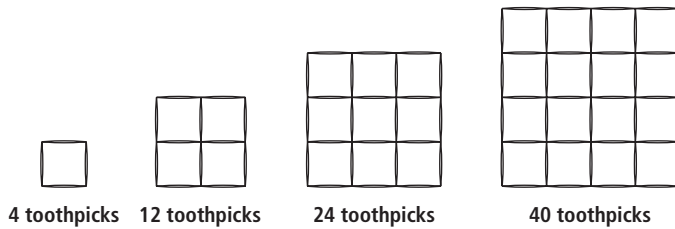
See Student Edition pages 446–449 for objectives.

REPRESENTATIONS Objective J

In 1 and 2, use a system of equations or quadratic regression to find a quadratic function containing the three points.

1. $(-1, -8), (1, 6), (3, 28)$ 2. $(-4, 7), (-2, 6), (0, 3)$

3. Jorge is determining the number of toothpicks necessary to make a square grid. He makes the following shapes.

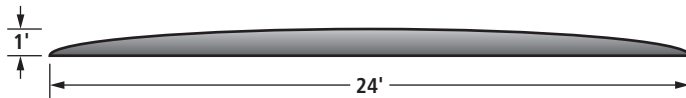


- a. Find a quadratic equation modeling T , the number of toothpicks necessary to make a square grid, with n toothpicks on a side. _____
- b. Find the number of toothpicks needed to make a grid with 10 toothpicks on a side. _____

4. The table at the right shows the extent of sea ice near the North Pole during February of each given year. The extent is measured in millions of square kilometers. Use “Years after 1990” for your x -values.

Year	Extent
1990	15.56
2000	15.18
2007	14.55

- a. Find a quadratic model for the data. _____
- b. Predict the extent of sea ice in February 2020. _____
5. Roads are built with a slightly curved surface so that water will run to the sides. A particular street is 24 feet wide, and the center is one foot higher than the edges. The profile is approximately parabolic:



- a. Choose a convenient location for a set of axes and give the coordinates of three points on the road surface. _____
- b. Find a quadratic equation modeling your points. _____
- c. Find the height of the road six feet from the edge. _____