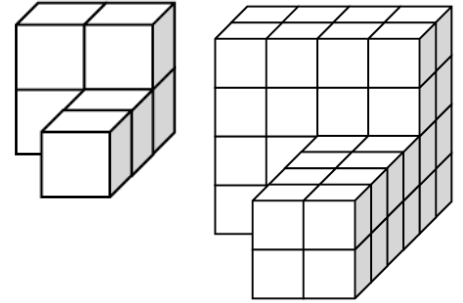


Name _____

Period _____ Date _____

Homework 11.1.3

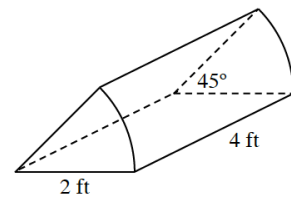
1. Consider the two similar solids at right. What is the linear scale factor between the two solids?



- a. What is the surface area of each solid? What is the ratio of the surface areas? How is this ratio related to the linear scale factor?
- b. Now calculate the volume of each solid. How are the volumes related? Compare this to the linear scale factor and record your observations.

2. Without using a calculator, what is the sum of the interior angles of a 1002-gon? Show all work.

3. Compute the volume of the solid shown at right.



4. **Multiple Choice:** If the larger cube can hold 27 cubes of edge length 1 unit, then what is the edge length of the larger cube?

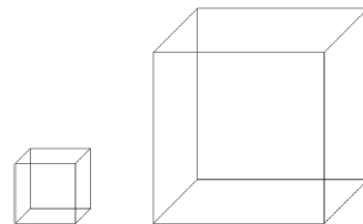
A. 27

B. 9

C. 8

D. 3

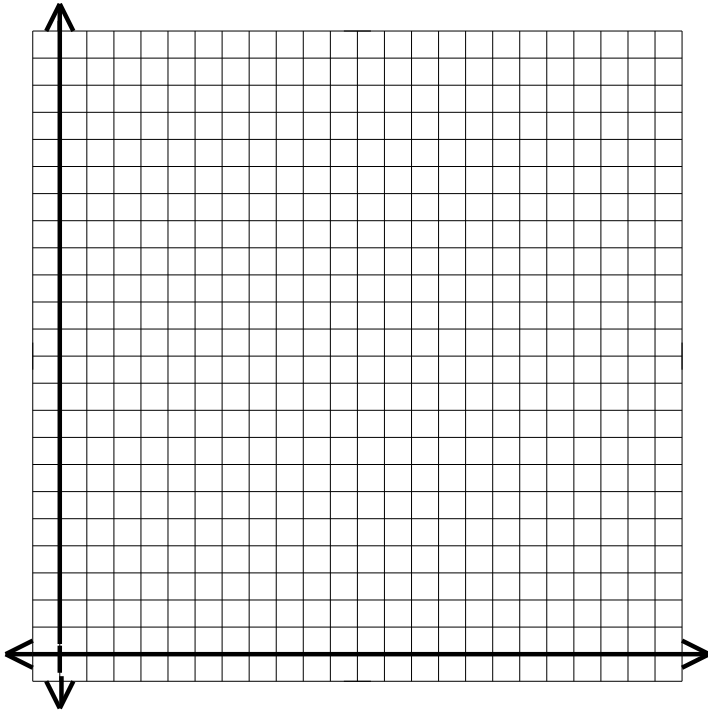
E. none of these



5.

Annie remembers the Water Balloon Contest and wants to try her skill at launching a balloon. Her balloon's flight can be modeled by the function $y = -\frac{1}{2}(x-1)^2 + 2$ where x is the horizontal distance (yd) the balloon has traveled from the goal line, and y is the height (yd) of the balloon above the ground.

- a. Sketch a graph of the function and label the x - and y -intercepts. What do the intercepts tell you about the flight of the balloon?



- b. What is the maximum height the balloon reaches? Justify your answer.

5. Jamie teaches ballroom dance at a dance studio. Each month, she offers a series of group classes for a charge of \$45/person.

- a. Write a function f to represent Jamie's monthly earnings based on the number of participants. What is an appropriate domain for your function?

- b. Jamie rents a large room at the dance studio for \$1200/month. Write a function p to represent Jamie's monthly profits based on the number of participants. How many participants does Jamie need to make a profit each month?