Name _____ Class _____ Date _____

Practice 8-9

Exploring Similar Solids

Complete the table for each prism.

	Original Size		Doubled Dimensions		
	Dimensions (m)	S.A. (m^2)	Dimensions (m)	S.A. (m^2)	New S.A. ÷ Old S.A.
1.	$2 \times 3 \times 4$				
2.	$5 \times 5 \times 9$				
3.	$7 \times 7 \times 7$				
4.	$8 \times 12 \times 15$				
5.	$15 \times 15 \times 20$				
6.	$32 \times 32 \times 32$				

7. What conclusion can you draw?

_____

_____

8. A rectangular prism is 8 cm by 10 cm by 15 cm. What are the volume and surface area of the prism?

_____

9. In Exercise 8, if each dimension of the prism is halved, what are the new volume and surface area?

_____

Use the triangular prism shown at the right for Exercises 10 and 11.

10. Find the volume and surface area.

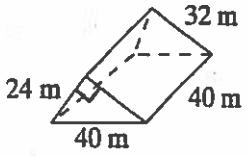
_____

11. If each dimension of the prism is doubled, what are the new volume and surface area?

_____

12. A rectangular prism is 8 cm long, 24 cm wide, and 43 cm high. The length is doubled, and the width is tripled. What happens to the volume?

_____



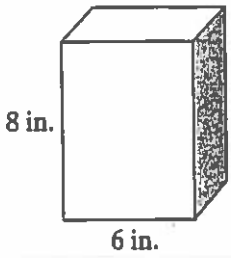
Name _____ Class _____ Date _____

Puzzle 8-9

Exploring Similar Solids

Plastics, Inc. is ready to launch a new product. The company is designing a set of square rectangular prism canisters that will save space by nesting inside each other. To reduce costs, the company would like to use as many existing molds as possible. Take a look at the canisters produced by the existing molds and determine which ones are suitable for the new product. Suitable molds will produce canisters that are similar prisms and will nest inside one another. (Hint: 4 of the 6 are similar.)

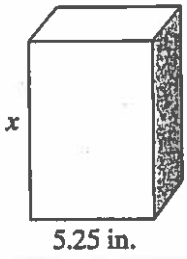
Mold A



$V = 288 \text{ in.}^3$

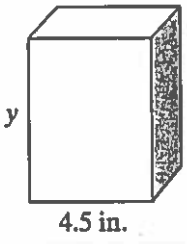
$SA = 264 \text{ in.}^2$

Mold B



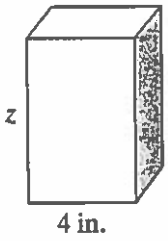
$SA = 202.125 \text{ in.}^2$

Mold C



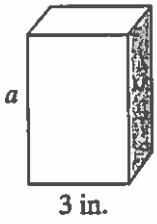
$SA = 148.5 \text{ in.}^2$

Mold D



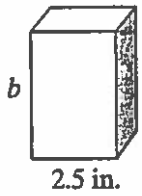
$V = 80 \text{ in.}^3$

Mold E



$SA = 66 \text{ in.}^2$

Mold F



$V = 37.125 \text{ in.}^3$