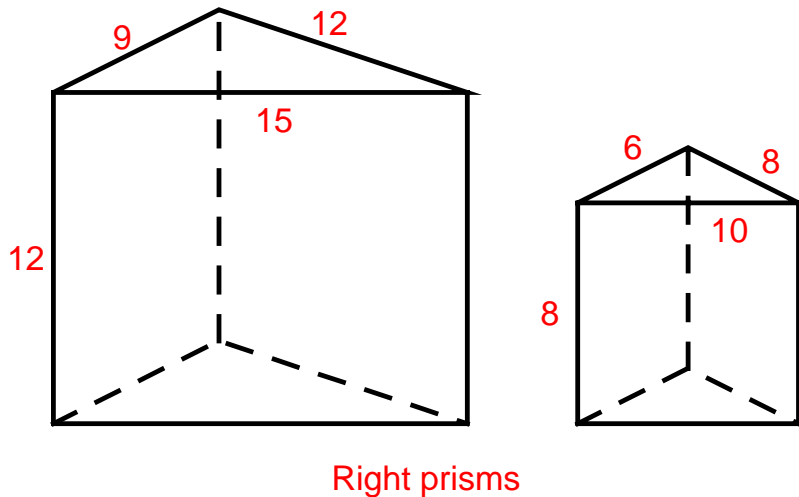


## Worksheet 10.4: Areas and Volumes of Similar Solids

The two right prisms below are similar. Answer the following questions based on the figure.



1. What is the scale factor of the larger prism to the smaller prism?
  
2. What is the ratio of the total areas of the prisms?
  
3. What is the ratio of the volumes of the prisms?
  
4. Two spheres have diameters 12 and 18.
  - (a) What is the ratio of their areas?
  
  - (b) What is the ratio of their volumes?

5. Two spheres have volumes of  $8\pi$  and  $27\pi$ . Find the ratios of the following.

(a) volumes

(b) radii

(c) areas

Complete the table below, which refers to two similar cones.

	6.	7.	8.	9.	10.
Scale factor	2 : 3				
Ratio of slant heights			5 : 2		
Ratio of lateral areas				4 : 9	
Ratio of total areas		25 : 81			
Ratio of volumes					8 : 125

11. A certain kind of yarn is sold in a ball 8 cm in diameter and in a ball 12 cm in diameter. The smaller ball costs \$3.50 and the larger one costs \$14.00. Which is the better buy?

12. Two balls made of the same metal have radii 4 cm and 9 cm. If the smaller ball weighs 6 kg, how much does the larger ball weigh?