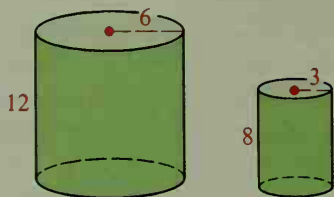


## Classroom Exercises

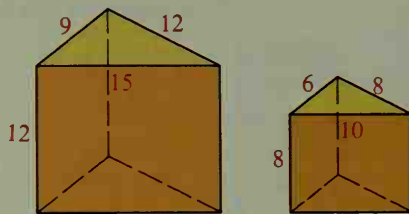
Tell whether the solids in each pair are similar. Explain your answer.

1.



Right cylinders

2.



Right prisms

3. For the prisms in Exercise 2, find the ratios of:
  - a. the lateral areas
  - b. the total areas
  - c. the volumes
4. Two spheres have diameters 24 cm and 36 cm.
  - a. What is the ratio of the areas?
  - b. What is the ratio of the volumes?
5. Two spheres have volumes  $2\pi \text{ m}^3$  and  $16\pi \text{ m}^3$ . Find the ratios of:
  - a. the volumes
  - b. the diameters
  - c. the areas

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

	6.	7.	8.	9.	10.	11.
Scale factor	3:4	5:7	?	?	?	?
Ratio of base circumferences	?	?	2:1	?	?	?
Ratio of slant heights	?	?	?	1:6	?	?
Ratio of lateral areas	?	?	?	?	4:9	?
Ratio of total areas	?	?	?	?	?	?
Ratio of volumes	?	?	?	?	?	8:125

12. Plane  $PQR$  is parallel to the base of the pyramid and bisects the altitude. Find the following ratios.
  - a. The perimeter of  $\triangle PQR$  to the perimeter of  $\triangle ABC$
  - b. The lateral area of the top part of the pyramid to the lateral area of the whole pyramid
  - c. The lateral area of the top part of the pyramid to the lateral area of the bottom part
  - d. The volume of the top part of the pyramid to the volume of the bottom part
13. Find each ratio in Exercise 12 if the height of the top pyramid is 3 cm and the height of the whole pyramid is 5 cm.

