Volume and Similarity and composite figures Name_____

1. Are all cubes similar? Why or why not?

2. Two pyramids have a scale factor of 2:7. What is the ratio of their volumes?

3. Two spheres have radii of 5 and 9. What is the ratio of their volumes?

4. The volume of two hemispheres is in a ratio of 125:1728. What is the scale factor of their radii?

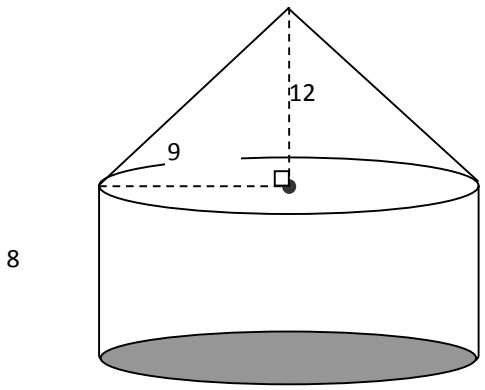
5. A cone has a volume of 15π and is similar to another larger cone. If the scale factor is 5:9, what is the volume of the larger cone?

6. A cube has sides of length x and is enlarged so that the sides are 4x. How does the volume change?

7. The ratio of the volumes of two tetrahedrons is 1000:1. The smaller tetrahedron has a side length of 6, what is the side length of the larger tetrahedron?

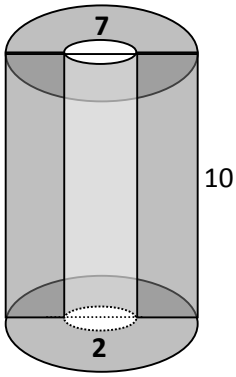
Find the volume of the composite figure. Round to the nearest tenth if necessary.

8



`Find the volume of the shaded region. Use 3.14 for pi.

11.



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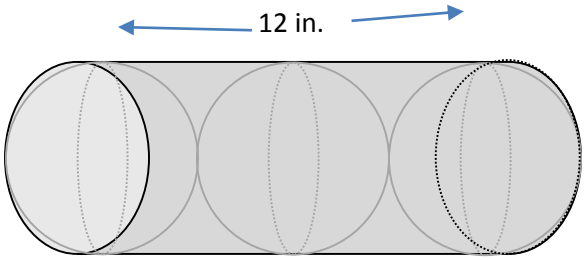

13. A basketball is being shipped in a square box. How much space is not filled by the basketball?