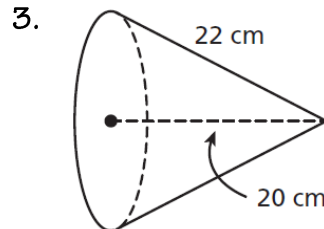
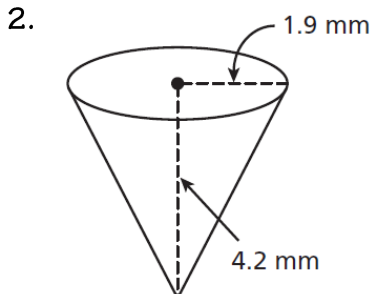
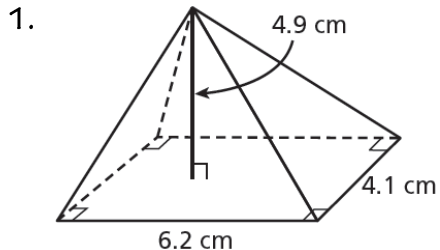


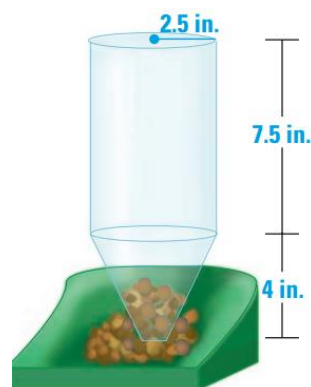
### 8.4 – Volume of Cones & Pyramids

**SHOW YOUR WORK ON A SEPARATE SHEET OF PAPER.**

Find the volume of each pyramid or cone. Round your answer to the nearest hundredth, if necessary. For cones, also provide an answer in terms of  $\pi$ .

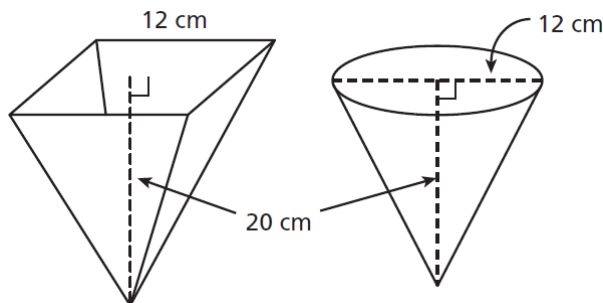


4. Use the diagram of the automatic pet feeder. (1 cup = 14.4 in.<sup>3</sup>)
- What is the volume of the pet feeder? Round to the nearest tenth of a cubic inch.
  - Calculate the amount of food – in terms of cups – that can be placed in the feeder.

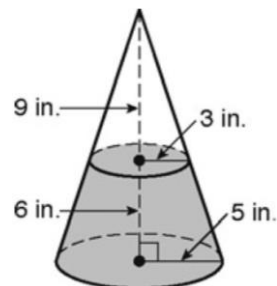


5. A pyramid has a square base and a height of 5 feet. The volume of the pyramid is 60 ft<sup>3</sup>. Find the length of a side of the pyramid's base.

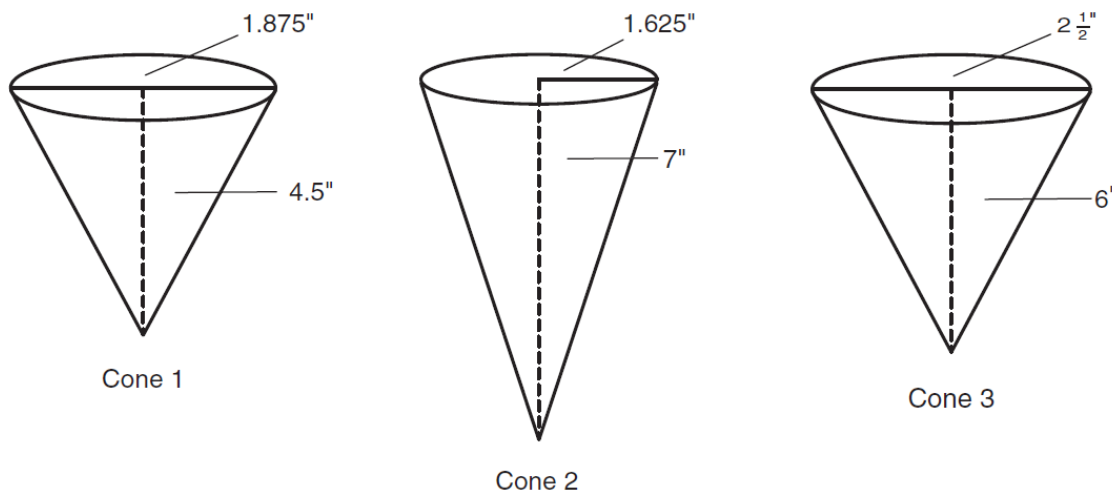
6. Popcorn is available in two cups: a square pyramid or a cone, as shown. The price of each cup of popcorn is the same. Which cup is the better deal? Explain your reasoning.



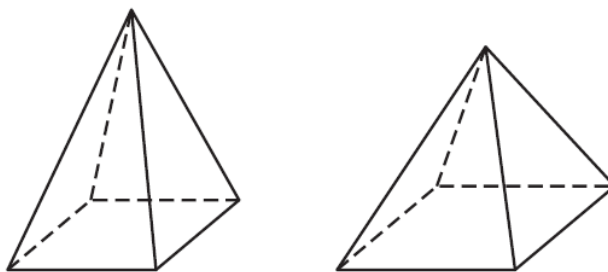
7. Find the volume of the shaded solid in the figure shown. Express your answer in terms of  $\pi$ .



8. Joel owns a frozen yogurt and fruit smoothie shop. He just placed an order for three different sizes of cones. He needs to determine how much to charge for each cone and decides that knowing the volume of each might help him make his decision.



- Calculate the volume of each cone. Round your answer to the nearest hundredth.
  - Determine which size Joel should charge the most for and the least for. Explain your reasoning.
9. Pyramid tents were popular for a time during the 19<sup>th</sup> century. Although their popularity declined during the 20<sup>th</sup> century, they have recently begun to regain popularity again. The design is ideal for shaping canvas, and it only requires on pole and some stakes to secure it. Joe wants to make a right square pyramid tent and is considering two different sizes. He will either make one with a base that is 10 feet by 10 feet and has a height of 12 feet, or he will make one with a base that is 12 feet by 12 feet and has a height of 8 feet.
- Sketch the two pyramid designs Joe is considering and label them with the given measurements.



- Calculate the volume of each proposed tent.
- Which pyramid tent will have the most interior space?