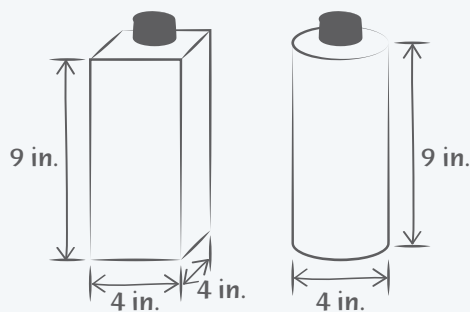




UNDERSTAND

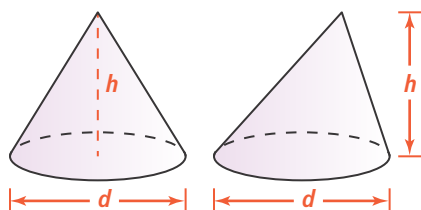
13. **Error Analysis** Dylan compares the volumes of two bottles. What is Dylan's error?



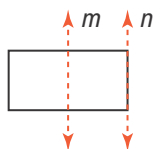
The volume of the rectangular prism is equal to the volume of the cylinder because they have the same dimensions.



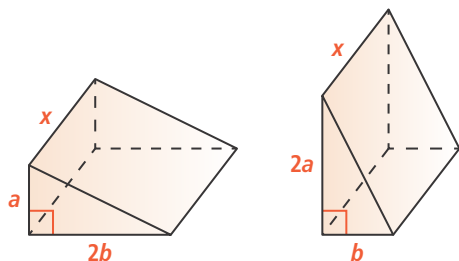
14. **Higher Order Thinking** Does Cavalieri's Principle apply to the volumes of the cones shown? Explain.



15. **Mathematical Connections** Does rotating the rectangle about line m result in a cylinder with the same volume as rotating the rectangle about line n ? Explain.



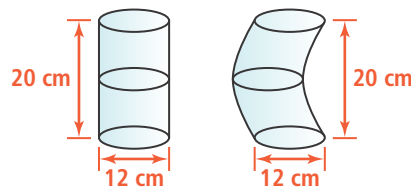
16. **Use Appropriate Tools** Do the prisms shown have equivalent volumes? Explain.



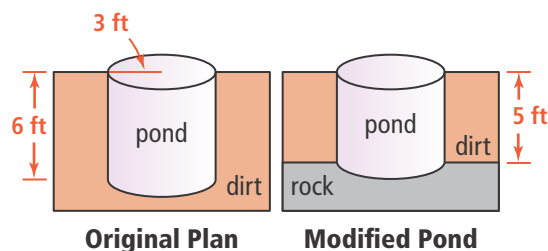
PRACTICE

17. Katrina buys the two vases shown. How do the volumes of the vases compare? Explain.

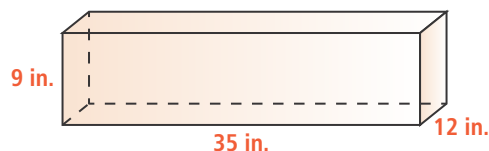
SEE EXAMPLE 1



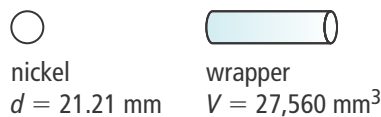
18. Talisa plans a 6-foot deep pond. While digging, she hits rock 5 feet down. How can Talisa modify the radius to maintain the original volume of the pond? SEE EXAMPLE 2



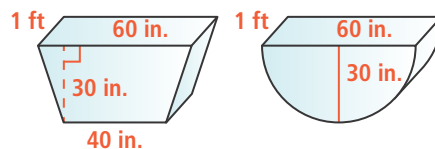
19. The instructions for plant food say to use 0.25 gram per cubic inch of soil. How many grams of plant food should Jordan use if the planter box shown is full of soil? SEE EXAMPLE 3



20. If a stack of 40 nickels fits snugly in the coin wrapper shown, how thick is 1 nickel? Round to the nearest hundredth. SEE EXAMPLE 4

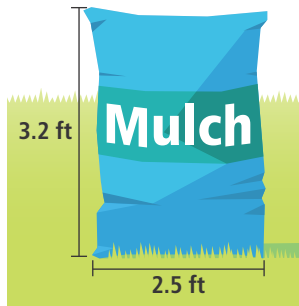


21. Sections of two flood-control ditches are shown. Which one holds the greater volume of water per foot? Explain. SEE EXAMPLE 5

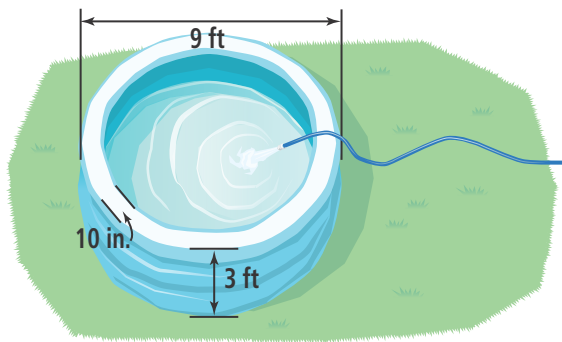


APPLY

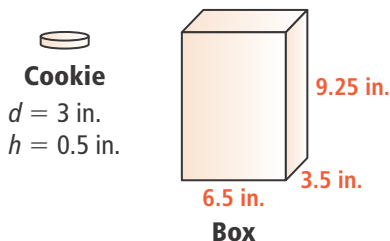
22. **Use Appropriate Tools** How many 3-inch thick bags of mulch should Noemi buy to cover 100 square feet at a depth of 4 inches?



23. **Reason** Ines's younger brother will be home in a half hour. If her garden hose flows at a rate 24 gal/min, does she have enough time to fill the pool before he gets home? Explain. (Hint: $1 \text{ ft}^3 = 7.48 \text{ gal}$)

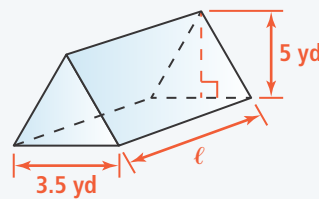


24. **Model With Mathematics** The ABC Cookie Company wants to promise an average of "12 chocolate chips per cookie." Assuming that the cookies fill about 80% of the box by volume, will 600 chocolate chips for each box of cookies be sufficient to make the claim? Explain.



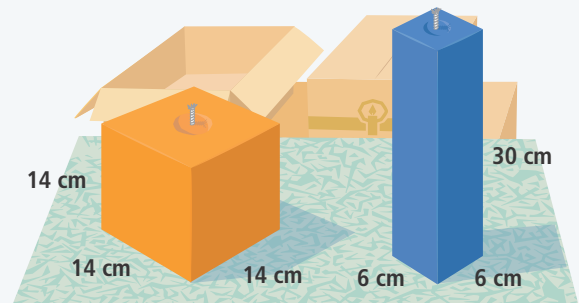
ASSESSMENT PRACTICE

25. Cylinders A, B, and C have the same volume. Cylinder A has diameter 12 cm and height 8 cm.
- If the diameter of cylinder B is 16 cm, what is the height?
 - If the height of cylinder C is 32 cm, what is the diameter?
26. **SAT/ACT** If the volume of the prism shown is 70 cubic yards, what is its length?



- Ⓐ 4 yd Ⓑ 8 yd Ⓒ 16 yd Ⓓ 28 yd

27. **Performance Task** A candle company receives an order for an overnight delivery of 8 short candles and 6 tall candles. The overnight service has a weight limit of 23 kg.



Part A The density of the wax used to make each candle is 0.0009 kg/cm^3 . What is the weight of the order? Can the order be filled and shipped for delivery?

Part B If no tall candles are included in the order, what is the greatest number of short candles that can be delivered?

Part C What combination of tall and short candles can be delivered if the total number of candles delivered is 10?