

8-9: Solve Problems Involving Volume

1. Sample answer: First you must find the area of the base, B . Multiplying this by the height is like extending the flat base so that it takes up space, and the amount of space occupied by it is the volume.
13. 864 in.^3
14. 25 cm^3
15. a. 63.45 in^3
b. 317.25 in^3
2. Sample answer: Use the volume formula $V = Bh$ and substitute the given volume and dimension. Then solve for the missing dimension.
16. 120
17. C
3. Sample answer: Find the volume of each prism that makes up the figure. Then add the volumes to find the total volume.
4. About $29,250 \text{ cm}^3$
5. No; Sample answer: The area of the base of the cheese box is $\frac{1}{2} \cdot 6 \cdot 4 = 12$ inches. So the missing width of the box is 2 inches. Therefore, the cheese cube is too large to fit inside the width of the box.
6. 861 in.^3
7. 4.2; 2.8
41.16
8. 6.1; 14
14
1,793.4
9. Yes; The prism is 21 meters long, and the total length of the cars and the connector is 19 meters.
10. About 13.25 feet
11. 4 feet and 12 feet
12. $6,739 \text{ cm}^3$