Volume of Rectangular Prisms

Find the volume.

1. \(V = \text{length} \times \text{width} \times \text{height}\)
   \[V = \frac{91}{4} \times \frac{31}{4} \times \frac{275}{4} = \frac{150875}{64}\] m³

2. \(V = \text{length} \times \text{width} \times \text{height}\)
   \[V = 5 \times 3 \frac{1}{2} \times \frac{3}{4} = \frac{375}{8}\] in³

3. \(V = \text{length} \times \text{width} \times \text{height}\)
   \[V = 4 \frac{1}{2} \times 2 \frac{1}{2} \times \frac{3}{4} = \frac{420}{4}\] m³

4. \(V = \text{length} \times \text{width} \times \text{height}\)
   \[V = 7 \frac{1}{2} \times 2 \frac{1}{2} \times \frac{3}{4} = \frac{9125}{16}\] ft³

5. \(V = \text{length} \times \text{width} \times \text{height}\)
   \[V = 8 \times 4 \frac{1}{2} \times 4 \frac{1}{2} = \frac{360}{4}\] m³

6. \(V = \text{length} \times \text{width} \times \text{height}\)
   \[V = 2 \frac{1}{2} \times 6 \times 3 = \frac{30}{16}\] ft³

7. \(V = \text{length} \times \text{width} \times \text{height}\)
   \[V = 14 \times 9 \frac{1}{2} \times 2 \frac{7}{10} = \frac{9642.5}{4}\] m³

8. \(V = \text{length} \times \text{width} \times \text{height}\)
   \[V = \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} = \frac{1}{27}\] in³

9. \(V = \text{length} \times \text{width} \times \text{height}\)
   \[V = 48 \times 16 \times 3 \frac{1}{2} = \frac{3280}{10}\] cm³

Problem Solving

10. A cereal box is a rectangular prism that is 8 inches long and 2 \(\frac{1}{2}\) inches wide. The volume of the box is 200 in³. What is the height of the box?
   \[V = l \times w \times h\]
   \[200 = 8 \times 2 \frac{1}{2} \times h\]
   \[h = \frac{200}{20} = 10\] in

11. A stack of paper is \(8 \frac{1}{2}\) in. long by 11 in. wide by 4 in. high. What is the volume of the stack of paper?
   \[V = l \times w \times h\]
   \[V = 8 \frac{1}{2} \times 11 \times 4 \approx 374\] in³