Practice B
Surface Area of Prisms and Cylinders

Find the surface area of each figure to the nearest tenth. Use 3.14 for \( \pi \).

1. \[
\begin{array}{c}
\text{15 ft} \\
32 \text{ ft}
\end{array}
\]

2. \[
\begin{array}{c}
12 \text{ cm} \\
17 \text{ cm} \\
11 \text{ cm}
\end{array}
\]

3. \[
\begin{array}{c}
15 \text{ in.} \\
9 \text{ in.} \\
12 \text{ in.} \\
22 \text{ in.}
\end{array}
\]

4. \[
\begin{array}{c}
14 \text{ m} \\
14 \text{ m} \\
14 \text{ m}
\end{array}
\]

5. \[
\begin{array}{c}
7.5 \text{ cm} \\
10.5 \text{ cm}
\end{array}
\]

6. \[
\begin{array}{c}
16.5 \text{ ft} \\
30 \text{ ft} \\
17.8 \text{ ft}
\end{array}
\]

7. \[
\begin{array}{c}
4 \text{ in.} \\
10 \text{ in.}
\end{array}
\]

8. \[
\begin{array}{c}
18.1 \text{ ft} \\
15.3 \text{ ft} \\
12.4 \text{ ft}
\end{array}
\]

9. \[
\begin{array}{c}
13 \text{ m} \\
12 \text{ m} \\
5 \text{ m}
\end{array}
\]

10. Find the surface area to the nearest tenth of a rectangular prism with height 15 m and sides 14 m and 13 m.

11. Find the surface area to the nearest tenth of a cylinder 61.7 ft tall that has a diameter of 38 ft.

12. Henry wants to paint the ceiling and walls of his living room. One gallon of paint covers 450 ft\(^2\). The room is 24 ft by 18 ft, and the walls are 9 ft high. How many full gallons of paint will Henry need to paint his living room?

13. A rectangular prism is 18 in. by 16 in. by 10 in. Explain the effect, if any, tripling all the dimensions will have on the surface area of the figure.
Reading Strategies
1. the cone  2. a polygon
3. the pyramid  4. one
5. three
6. Possible answer: the base of each figure is a different shape.

Puzzles, Twisters & Teasers
3. A  4. Z
5. L
A B R A Z I L N U T

LESSON 8-7

Practice A
1. 96 ft²  2. 207.2 cm²
3. 288 in²  4. 156 m²
5. 62 ft²  6. 314 m²
7. 108 in²  8. 345.4 ft²
9. 268.3 m²  10. 6179.5 ft²
11. 230.6 m²  12. 106.8 in²

Practice B
1. 4427.4 ft²  2. 1046 cm²
3. 900 in²  4. 1176 m²
5. 847.8 cm²  6. 2645.4 ft²
7. 879.2 in²  8. 1382.2 ft²
9. 150 m²  10. 1174 m²
11. 9629.1 ft²  12. 3 gal
13. Possible answer: By tripling the dimensions, the surface area becomes 9 times larger, from 1256 in² to 11,304 in².

Practice C
1. 5272.1 m²  2. 912 2/3 cm²
3. 3300 in²  4. 188 in²
5. 423.4 cm²  6. $31.90
7. height = 22 in.  8. height = 15 ft

Review for Mastery
1. Face Area in²
top 6 x 3; 18
bottom 6 x 3; 18
front 6 x 5; 30
back 6 x 5; 30
left 3 x 5; 15
right 3 x 5; 15
total = 126
2. 5 x 7; 5 + 7 + 5 + 7; 3
   35; 24; 3
   70; 72; 142
3. 12²; 12; 8
   288; 192
   480
   480
   1507.2
4. 471 ft²  5. 163 cm²

Challenge
1. Check students' work.
2. 14
3. 8 equilateral triangles and 6 octagons
4. 3130.9 in²

Problem Solving
1.

<table>
<thead>
<tr>
<th>Package</th>
<th>Surface Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prism 1</td>
<td>136 in²</td>
</tr>
<tr>
<td>Prism 2</td>
<td>96 in²</td>
</tr>
<tr>
<td>Cylinder</td>
<td>89.2 in²</td>
</tr>
</tbody>
</table>
2. cylinder 3. 1064.66 cm²
4. 280 ft²  5. A
6. G

Reading Strategies
1. 24 square inches
2. 24 square inches
3. 30 square inches
4. 30 square inches
5. 20 square inches