Practice C

Surface Area

Find the surface area $S$ of each prism.

1. $S =$
   \[
   \begin{array}{c}
   \text{2.4 cm} \\
   \text{4.5 cm} \\
   \text{1.8 cm}
   \end{array}
   \]

2. $S =$
   \[
   \begin{array}{c}
   \text{2 \frac{1}{2} ft} \\
   \text{4 \frac{1}{4} ft} \\
   \text{3 \frac{1}{2} ft}
   \end{array}
   \]

Find the surface area $S$ of each pyramid.

3. $S =$
   \[
   \begin{array}{c}
   \text{7.8 m} \\
   \text{6.4 m}
   \end{array}
   \]

4. $S =$
   \[
   \begin{array}{c}
   \text{9 \frac{1}{4} ft} \\
   \text{6 \frac{1}{4} ft}
   \end{array}
   \]

Find the surface area $S$ of each cylinder. Write your answers in terms of $\pi$.

5. $S =$
   \[
   \begin{array}{c}
   \text{4.6 cm} \\
   \text{8.7 cm}
   \end{array}
   \]

6. $S =$
   \[
   \begin{array}{c}
   \text{2.9 in.} \\
   \text{10.5 in.}
   \end{array}
   \]

7. A cylindrical shipping box has a diameter of 4 inches and a height of 2 feet. What is the surface area of the box? Write your answer in terms of $\pi$.

8. A rectangular box has no top. It is 6 inches long, 4 inches wide, and 5 inches tall. What is the surface area of the box?
Practice A

Surface Area

Find the surface area \( S \) of each net.

1. \[
\begin{array}{c}
\text{Net 1} \\
\text{Net 2}
\end{array}
\]

\( S = 34 \text{ ft}^2 \)

2. \[
\begin{array}{c}
\text{Net 3} \\
\text{Net 4}
\end{array}
\]

\( S = 34 \text{ in}^2 \)

3. \[
\begin{array}{c}
\text{Net 5} \\
\text{Net 6}
\end{array}
\]

\( S = 21 \text{ yd}^2 \)

4. \[
\begin{array}{c}
\text{Net 7} \\
\text{Net 8}
\end{array}
\]

\( S = 88 \text{ m}^2 \)

Find the surface area \( S \) of each prism.

5. \[
\begin{array}{c}
\text{Prism 1} \\
\text{Prism 2}
\end{array}
\]

\( S = 24 \text{ in}^2 \)

6. \[
\begin{array}{c}
\text{Prism 3} \\
\text{Prism 4}
\end{array}
\]

\( S = 14 \text{ ft}^2 \)

Practice B

Surface Area

Find the surface area \( S \) of each prism.

1. \[
\begin{array}{c}
\text{Prism 1} \\
\text{Prism 2}
\end{array}
\]

\( S = 600 \text{ in}^2 \)

2. \[
\begin{array}{c}
\text{Prism 3} \\
\text{Prism 4}
\end{array}
\]

\( S = 268 \text{ ft}^2 \)

Find the surface area \( S \) of each pyramid.

3. \[
\begin{array}{c}
\text{Pyramid 1} \\
\text{Pyramid 2}
\end{array}
\]

\( S = 297 \text{ m}^2 \)

4. \[
\begin{array}{c}
\text{Pyramid 3} \\
\text{Pyramid 4}
\end{array}
\]

\( S = 229 \text{ m}^2 \)

Find the surface area \( S \) of each cylinder. Write your answers in terms of \( \pi \).

5. \[
\begin{array}{c}
\text{Cylinder 1} \\
\text{Cylinder 2}
\end{array}
\]

\( S = 88 \pi \text{ cm}^2 \)

6. \[
\begin{array}{c}
\text{Cylinder 3} \\
\text{Cylinder 4}
\end{array}
\]

\( S = 104 \pi \text{ in}^2 \)

7. Why can you find an exact surface area measurement for a prism and pyramid but not for a cylinder?

To find the area of a circle, you use \( \pi \), which is an estimated, not an exact value.

8. The surface area of a rectangular prism is 48 square feet. The area of its front is 4 square feet, and the area of one side is 10 square feet. What is the area of the top of the prism?

\( \text{Area of top} = 12 \text{ ft}^2 \)

Review for Mastery

Surface Area

You can use what you know about finding the area of a polygon to find the surface area of a solid figure.

To find the surface area of the prism above, first find the area of each face.

2 congruent triangular bases

3 rectangular faces

Then, find the sum of all of the faces of the prism.

\( \text{SA} = 6 + 24 + 24 + 24 = 84 \text{ square units} \)

Find the surface area of each figure.

1. \[
\begin{array}{c}
\text{Figure 1} \\
\text{Figure 2}
\end{array}
\]

24 square units

2. \[
\begin{array}{c}
\text{Figure 3} \\
\text{Figure 4}
\end{array}
\]

40 square units