

# Reteaching 8-9

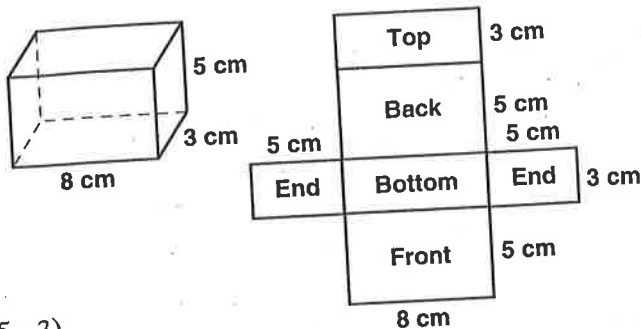
## Surface Areas of Prisms and Cylinders

The **surface area** of a prism is the sum of the areas of its faces. You can use a **net**, or pattern, for the prism to help you find its surface area.

- Add the areas of all the surfaces.

Surface Area

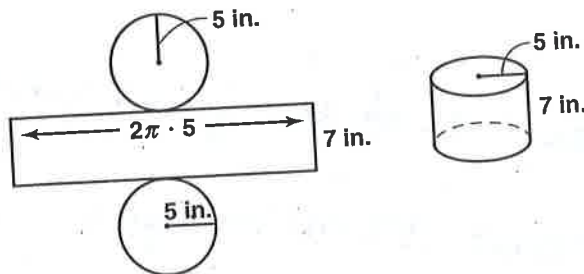
$$\begin{aligned}
 &= \text{front} + \text{back} + \text{top} + \text{bottom} + \text{end} + \text{end} \\
 &= (8 \cdot 5) + (8 \cdot 5) + (8 \cdot 3) + (8 \cdot 3) + (5 \cdot 3) + (5 \cdot 3) \\
 &= 40 + 40 + 24 + 24 + 15 + 15 \\
 &= 158 \text{ cm}^2
 \end{aligned}$$



- To find the surface area of a cylinder, add the area of the rectangle and the areas of the bases. Use 3.14 for  $\pi$ .

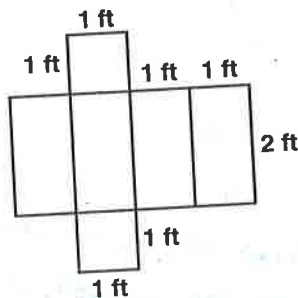
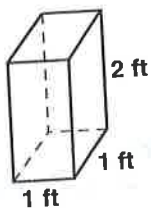
Surface area

$$\begin{aligned}
 &= \text{top} + \text{bottom} + \text{side (rectangle)} \\
 &= (\pi \cdot 5 \cdot 5) + (\pi \cdot 5 \cdot 5) + (2\pi \cdot 5 \cdot 7) \\
 &= (25\pi) + (25\pi) + (70\pi) \\
 &\approx 120 \cdot 3.14 = 376.8 \text{ in.}^2
 \end{aligned}$$



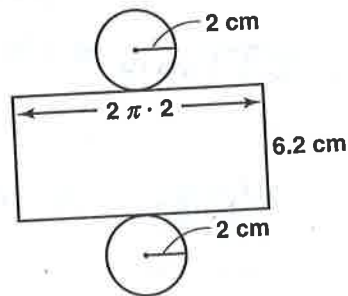
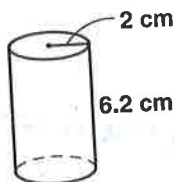
Use the net to find the surface area. Round your answers to the nearest whole unit.

1.



$$10 \text{ ft}^2$$

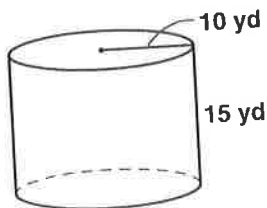
2.



$$103 \text{ cm}^2$$

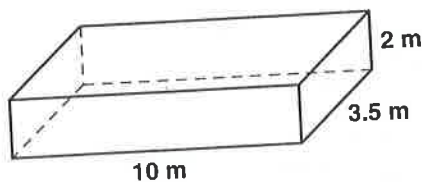
Draw a net for each figure. Then find the surface area to the nearest tenth of a unit.

3.



$$1570 \text{ yd}^2$$

4.



$$124 \text{ in}^2$$

# 8B: Reading Comprehension

FOR USE WITH

**Study Skill** Learning to read for detail takes practice. As you read your notes, underline or highlight important information.

Read the paragraph and answer the questions.

The Grand Canyon was formed by the Colorado River in Arizona. It is estimated to be nearly 10 million years old. With a length of 277 miles, the Grand Canyon is nearly 18 miles wide at its widest point and one mile deep in some places. Arizona, called the Grand Canyon State, has a total land area of approximately 113,000 square miles.

1. What is the paragraph about?

The size of the grand canyon

2. How old is the Grand Canyon?

About 10 million years

3. What dimensions are given for the Grand Canyon?

277 miles long by 18 miles wide by one mile deep

4. Use these dimensions to calculate the approximate area of the bottom of the Grand Canyon.

$277 \text{ miles} \times 18 \text{ miles} = 4,986 \text{ Square miles}$

5. What percent of the land area in Arizona is occupied by the Grand Canyon?

$\frac{4986}{113000}$  is approximately 4%

6. Why is the area determined in Exercise 4 a maximum area?

The grand canyon is 18 miles wide at its widest point. therefore using 18 miles as the width will give the maximum area.

7. ~~What is the approximate volume of the Grand Canyon?~~

8. **High-Use Academic Words** In Exercise 4, what does it mean to calculate?

a. to determine by mathematical processes

b. to show that you recognize something