Chapter 1 Problem Wrap-Up

Student Text Page
67

Suggested Timing
40 min

Tools
- scientific calculators

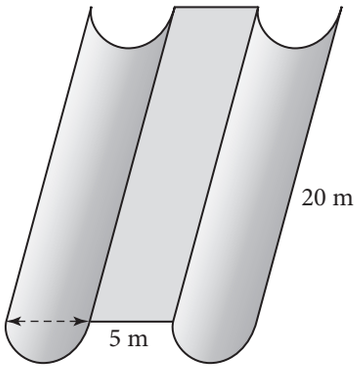
Optional
- computers with *The Geometer's Sketchpad®*

Related Resources
BLM 1-21 Chapter 1 Problem Wrap-Up Rubric

Teaching Suggestions

- Have students read the Chapter Problem Wrap-Up and ensure they understand what they are being asked to do. Relate the Chapter Problem revisits to the Chapter Problem Wrap-Up scenario.
- Have students work in groups to brainstorm the strategies involved in completing the problem and to suggest various designs for the park. Point out to students that they need to calculate the surface areas of their geometric figures, so choosing simple shapes that are easy to measure will simplify their calculations. Complex shapes are interesting to look at but might make the problem difficult to solve.
- Circulate as students complete the problem and assist them as necessary. Students can give more polished solutions if they have additional time and access to computers.
- If you assigned the Chapter Problem revisits section by section, the Chapter Problem Wrap-Up can be used as part of a summative assessment.
- If you are assigning the Chapter Problem as a whole at the end of the chapter, you can use it as part of a summative assessment or as a formative assessment prior to a Chapter Test or Task.

Level 3 Sample Response



The radius of each half pipe is 2.5 m. The curved surface of the half pipe is a rectangle with a length of 8 m and a width equal to half the circumference of a circle with radius 2.5 m.

$w = \frac{1}{2}w\pi r$
$= (3.14)(2.5)$
$= 7.85$ m

Area of the snowboard park is:
$A = 7.85 \times 20 + 5 \times 20 + 7.85 \times 20$
$= 414$

Since each bag of salt covers 400 m^2 of surface area, I will need approximately one bag of salt to cover this park.

Level 3 Notes

Look for the following:

- park design has at least three geometric figures with realistic dimensions
- geometric figures chosen have known surface area formulas
- the correct formulas are used to solve the problem
- values are correctly substituted values into formulas with few calculation errors
- organized solution and clear explanations

What Distinguishes Level 2

Look for the following:

- park design has three geometric figures with somewhat realistic dimensions
- geometric figures chosen may not have known surface area formulas
- some correct formulas are used to solve the problem
- values are correctly substituted values into formulas with some calculation errors
- somewhat organized solution and some explanation given

What Distinguishes Level 4

Look for the following:

- park design has three or more geometric figures with realistic dimensions
- geometric figures chosen have known surface area formulas
- the correct formulas are used to solve the problem
- values are correctly substituted values into formulas with very few or no calculation errors
- very organized solution and very clear explanations
- discusses information that might be missing from the question and/or discusses how interesting or challenging the park design is

Summative Assessment

- Use **BLM 1-21 Chapter 1 Problem Wrap-Up Rubric** to assess student achievement.