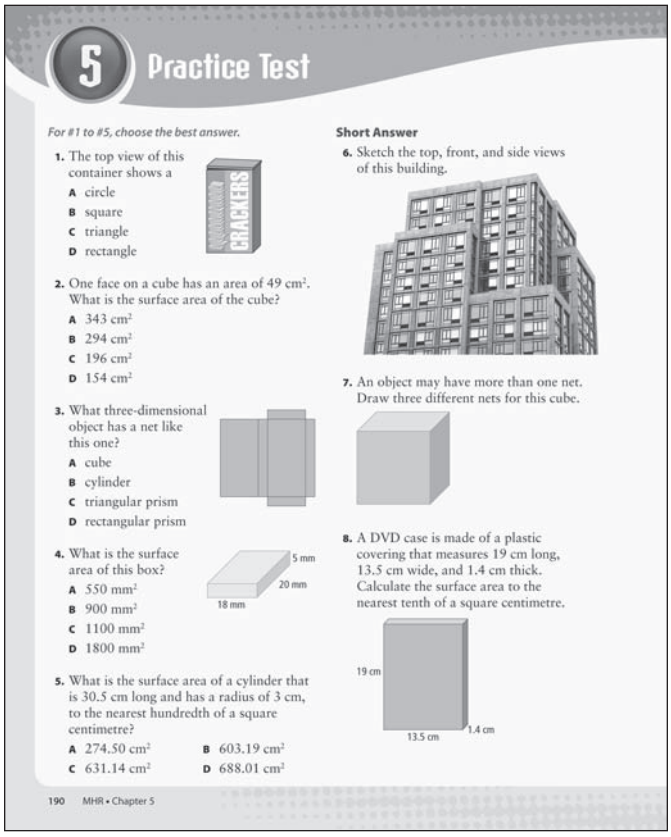
Practice Test 5



5 Practice Test

For #1 to #5, choose the best answer.

1. The top view of this container shows a
- **A** circle
- **B** square
- **C** triangle
- **D** rectangle

2. One face on a cube has an area of 49 cm². What is the surface area of the cube?
- **A** 343 cm²
- **B** 294 cm²
- **C** 196 cm²
- **D** 154 cm²

3. What three-dimensional object has a net like this one?
- **A** cube
- **B** cylinder
- **C** triangular prism
- **D** rectangular prism

4. What is the surface area of this box?
- **A** 550 mm²
- **B** 900 mm²
- **C** 1100 mm²
- **D** 1800 mm²

5. What is the surface area of a cylinder that is 30.5 cm long and has a radius of 3 cm, to the nearest hundredth of a square centimetre?
- **A** 274.50 cm²
- **B** 603.19 cm²
- **C** 631.14 cm²
- **D** 688.01 cm²

Short Answer

6. Sketch the top, front, and side views of this building.

7. An object may have more than one net. Draw three different nets for this cube.

8. A DVD case is made of a plastic covering that measures 19 cm long, 13.5 cm wide, and 1.4 cm thick. Calculate the surface area to the nearest tenth of a square centimetre.

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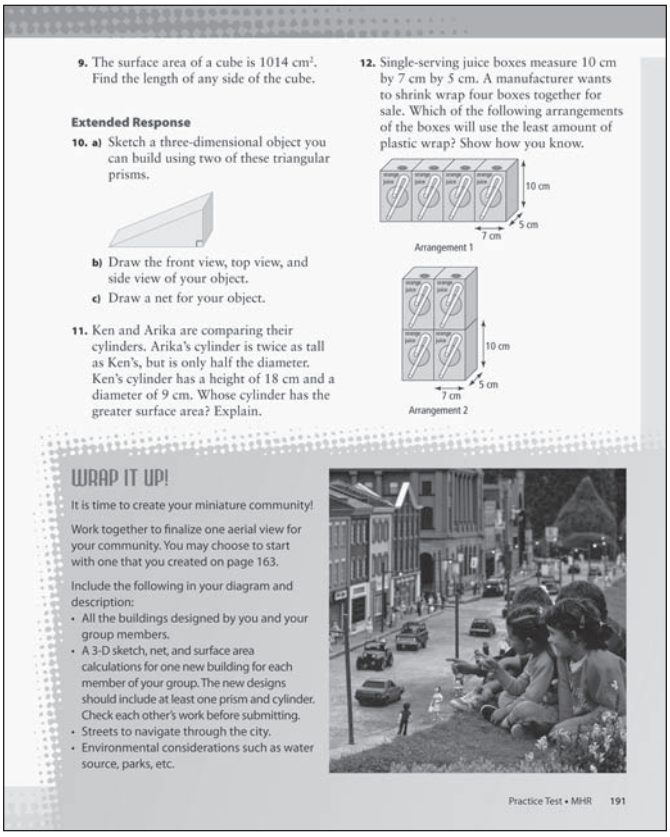

9. The surface area of a cube is 1014 cm². Find the length of any side of the cube.

Extended Response

10. a) Sketch a three-dimensional object you can build using two of these triangular prisms.

b) Draw the front view, top view, and side view of your object.

c) Draw a net for your object.

11. Ken and Arika are comparing their cylinders. Arika's cylinder is twice as tall as Ken's, but is only half the diameter. Ken's cylinder has a height of 18 cm and a diameter of 9 cm. Whose cylinder has the greater surface area? Explain.

12. Single-serving juice boxes measure 10 cm by 7 cm by 5 cm. A manufacturer wants to shrink wrap four boxes together for sale. Which of the following arrangements of the boxes will use the least amount of plastic wrap? Show how you know.

Arrangement 1

Arrangement 2

WRAP IT UP!

It is time to create your miniature community!

Work together to finalize one aerial view for your community. You may choose to start with one that you created on page 163.

Include the following in your diagram and description:
- All the buildings designed by you and your group members.
- A 3-D sketch, net, and surface area calculations for one new building for each member of your group. The new designs should include at least one prism and cylinder. Check each other's work before submitting.
- Streets to navigate through the city.
- Environmental considerations such as water source, parks, etc.

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***MathLinks 8*, pages 190–191**

Suggested Timing
40–50 minutes

Materials
- grid paper
- ruler
- 3-D objects

Blackline Masters
Master 8 Centimetre Grid Paper
BLM 5–16 Chapter 5 Test

Planning Notes

Allow time for students to clarify any misunderstandings before beginning the practice test. Have students first complete the questions they know they can do. Then, have them complete the questions they know something about. Finally, have them do their best on the questions that they are still struggling with.

This practice test can be assigned as an in-class or take-home assignment. Provide students with the number of questions they can comfortably do in one class. These are the minimum questions that will meet the related curriculum outcomes: #3–#7, and #9.

Study Guide

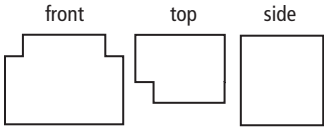
Question(s)	Section(s)	Refer to	The student can …
1, 6	5.1	Explore the Math, Example 1	✓ draw and label top, front, and side views of 3-D objects
2, 4	5.3	Example 1	✓ link area to surface area
3, 7	5.2	Example 1	✓ determine the correct nets for 3-D objects
5	5.4	Examples 1, 2	✓ find the surface area of a cylinder
8, 9, 12	5.3	Explore the Math, Example 1	✓ link area to surface area
10	5.1 5.2	Explore the Math, Example 1 Example 1	✓ draw and label top, front, and side views of 3-D objects ✓ determine the correct nets for 3-D objects ✓ draw nets for 3-D objects
11	5.4	Explore the Math, Examples 1, 2	✓ find the surface area of a cylinder

Answers

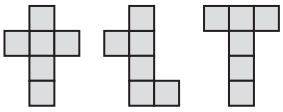
Chapter 5 Practice Test

1. D **2.** B **3.** D **4.** C **5.** C

6. Answers may vary. Example:

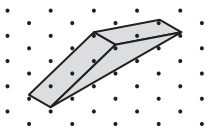


7. Answers may vary. Example:



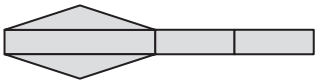
8. 604.0 cm^2 **9.** 13 cm

10. a) Answers may vary. Example:



b) Answers may vary. Example:

c) Answers may vary. Example:



11. Ken's cylinder with a surface area 635.85 cm^2 has a greater surface area than Arika's cylinder with a surface area 540.47 cm^2.

12. Arrangement 2 will use the least amount of plastic wrap as its surface area is 900 cm^2 while the surface area of Arrangement 1 is 940 cm^2.

Assessment	Supporting Learning
Assessment *as* Learning	
Chapter 5 Self-Assessment Have students review their earlier responses in the What I Need to Work On sections of their chapter Foldable.	• Allow concrete and kinesthetic learners to use 3-D objects as needed. • Have students use their responses on the practice test and work they completed earlier in the chapter to identify areas in which they may need to reinforce their understanding of skills or concepts. Before the chapter test, coach them in the areas in which they are having difficulties.
Assessment *of* Learning	
Chapter 5 Test After students complete the practice test, you may wish to use **BLM 5–16 Chapter 5 Test** as a summative assessment.	• Consider allowing students to use their chapter Foldable. • Allow concrete and kinesthetic learners to use 3-D objects as needed. • Consider using the Math Games on page 192 or the Challenge in Real Life on page 193 to assess the knowledge and skills of students who have difficulty with tests.