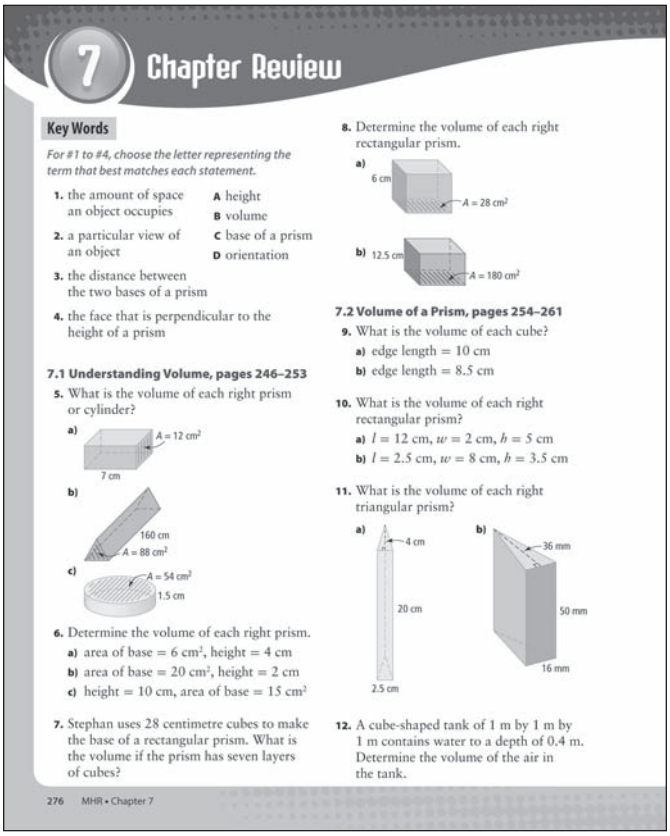
7 Chapter Review



7 Chapter Review

Key Words

For #1 to #4, choose the letter representing the term that best matches each statement.

1. the amount of space an object occupies
2. a particular view of an object
3. the distance between the two bases of a prism
4. the face that is perpendicular to the height of a prism

A height
B volume
C base of a prism
D orientation

7.1 Understanding Volume, pages 246–253

5. What is the volume of each right prism or cylinder?

a) $A = 12$ cm², 7 cm
b) 160 cm, $A = 88$ cm²
c) $A = 54$ cm², 1.5 cm

6. Determine the volume of each right prism.
   a) area of base = 6 cm², height = 4 cm
   b) area of base = 20 cm², height = 2 cm
   c) height = 10 cm, area of base = 15 cm²

7. Stephan uses 28 centimetre cubes to make the base of a rectangular prism. What is the volume if the prism has seven layers of cubes?

8. Determine the volume of each right rectangular prism.

a) 6 cm, $A = 28$ cm²
b) 12.5 cm, $A = 180$ cm²

7.2 Volume of a Prism, pages 254–261

9. What is the volume of each cube?
   a) edge length = 10 cm
   b) edge length = 8.5 cm

10. What is the volume of each right rectangular prism?
    a) $l = 12$ cm, $w = 2$ cm, $h = 5$ cm
    b) $l = 2.5$ cm, $w = 8$ cm, $h = 3.5$ cm

11. What is the volume of each right triangular prism?

a) 4 cm, 20 cm
b) 36 mm, 50 mm, 16 mm

12. A cube-shaped tank of 1 m by 1 m by 1 m contains water to a depth of 0.4 m. Determine the volume of the air in the tank.

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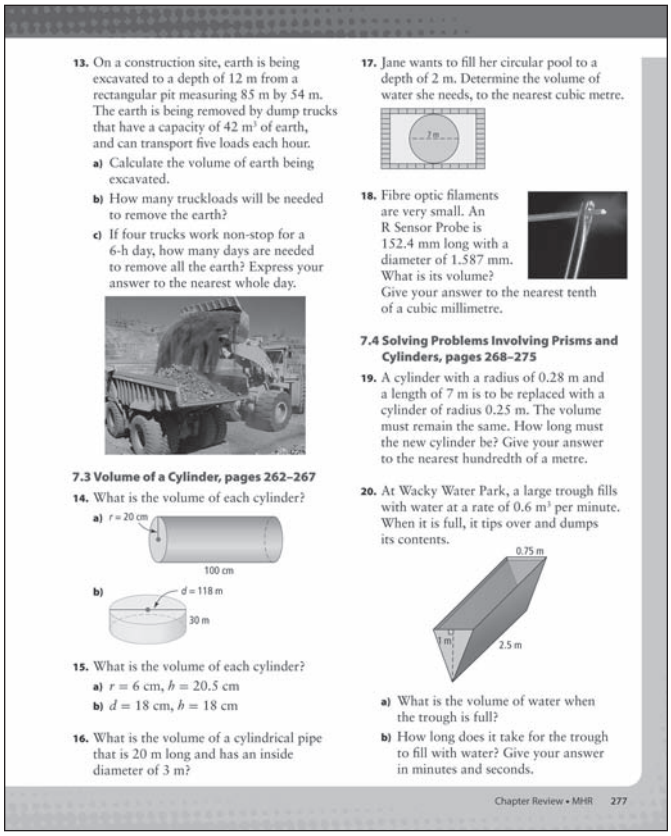

13. On a construction site, earth is being excavated to a depth of 12 m from a rectangular pit measuring 85 m by 54 m. The earth is being removed by dump trucks that have a capacity of 42 m³ of earth, and can transport five loads each hour.
    a) Calculate the volume of earth being excavated.
    b) How many truckloads will be needed to remove the earth?
    c) If four trucks work non-stop for a 6-h day, how many days are needed to remove all the earth? Express your answer to the nearest whole day.

7.3 Volume of a Cylinder, pages 262–267

14. What is the volume of each cylinder?

a) $r = 20$ cm, 100 cm
b) $d = 118$ m, 30 m

15. What is the volume of each cylinder?
    a) $r = 6$ cm, $h = 20.5$ cm
    b) $d = 18$ cm, $h = 18$ cm

16. What is the volume of a cylindrical pipe that is 20 m long and has an inside diameter of 3 m?

17. Jane wants to fill her circular pool to a depth of 2 m. Determine the volume of water she needs, to the nearest cubic metre.

18. Fibre optic filaments are very small. An R Sensor Probe is 152.4 mm long with a diameter of 1.587 mm. What is its volume? Give your answer to the nearest tenth of a cubic millimetre.

7.4 Solving Problems Involving Prisms and Cylinders, pages 268–275

19. A cylinder with a radius of 0.28 m and a length of 7 m is to be replaced with a cylinder of radius 0.25 m. The volume must remain the same. How long must the new cylinder be? Give your answer to the nearest hundredth of a metre.

20. At Wacky Water Park, a large trough fills with water at a rate of 0.6 m³ per minute. When it is full, it tips over and dumps its contents.

a) What is the volume of water when the trough is full?
b) How long does it take for the trough to fill with water? Give your answer in minutes and seconds.

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***MathLinks 8*, pages 276–277**

Suggested Timing
40–50 minutes

Materials
- ruler
- centimetre cubes (optional)
- calculator

Blackline Masters
BLM 7–5 Section 7.1 Extra Practice
BLM 7–7 Section 7.2 Extra Practice
BLM 7–9 Section 7.3 Extra Practice
BLM 7–11 Section 7.4 Extra Practice

Planning Notes

Have students work independently on #1 to #4, and then compare their answers with another student. After students have made corrections, have students work independently on the remaining questions. After completing the questions for each section, encourage students to check their answers with a partner. If students encounter difficulties, encourage them to refer to their chapter Foldable and previously completed questions in the related sections of the student resource. If students are unable to solve a particular problem, encourage them to ask you for assistance before continuing.

Consider having students make a list of the questions that they found difficult. They can then use the list to help them prepare for the practice test.

Meeting Student Needs

- Allow students to use centimetre cubes to model the problem in #7.
- Allow students to complete the chapter review using a combination of oral descriptions, diagrams, and written answers.
- Encourage students to use their chapter Foldable and to add new notes if they wish.
- Students who require more practice on a particular topic may refer to **BLM 7–5 Section 7.1 Extra Practice**, **BLM 7–7 Section 7.2 Extra Practice**, **BLM 7–9 Section 7.3 Extra Practice**, and **BLM 7–11 Section 7.4 Extra Practice**.

ELL

- Encourage students to work with a partner and practise the Key Words using flash cards.
- Explain the meaning of *fibre optic filaments* and the *R Sensor Probe* to English language learners.

Gifted and Enrichment

- Some students may already be familiar with the skills handled in this review. To provide enrichment and extra challenge, go to www.mathlinks8.ca and follow the links.

Assessment	Supporting Learning
Assessment *for* Learning	
Chapter 7 Review The Chapter 7 Review is an opportunity for students to assess themselves by completing selected questions in each section and checking their answers against the answers in the back of the student resource.	• Have students check the contents of the What I Need to Work On section of their chapter Foldable and do at least one question related to each item. • Have students revisit any section that they are having difficulty with prior to working on the chapter test.