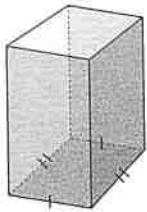


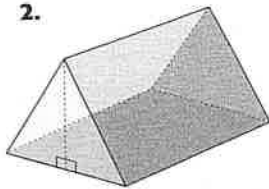
Practice

Name each prism.

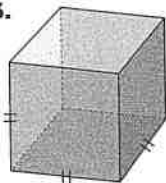
1.



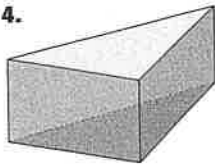
2.



3.

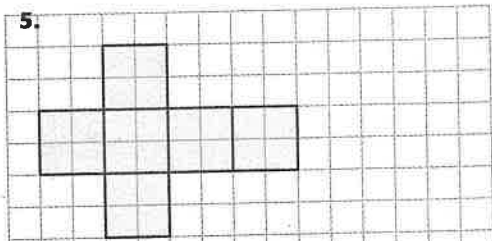


4.

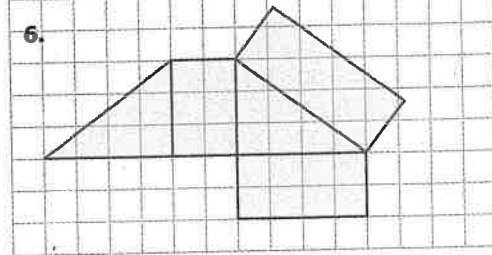


Which prism can be formed from each net?

5.

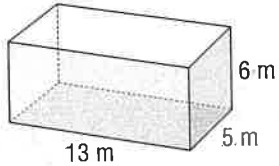


6.

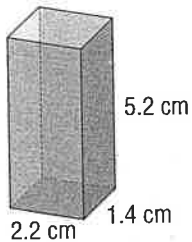


Estimate the surface area of each prism. Then, calculate it to the nearest square centimetre or square metre.

7.

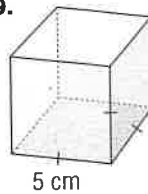


8.

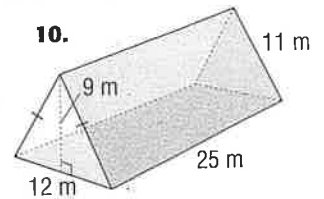


Calculate each surface area.

9.

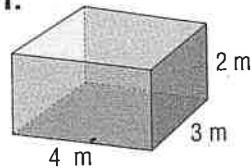


10.

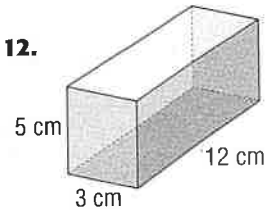


Estimate, then calculate the volume of each rectangular prism.

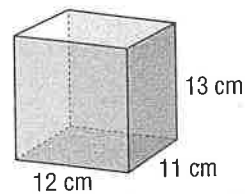
11.



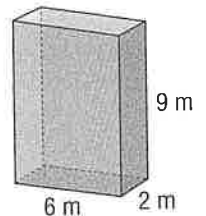
12.



13.

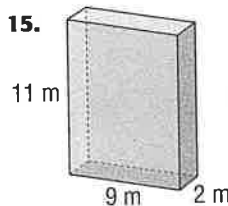


14.

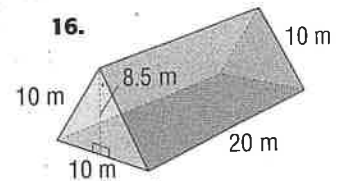


Calculate the surface area and volume of each prism to the nearest square or cubic unit.

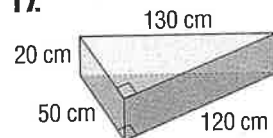
15.



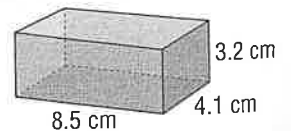
16.



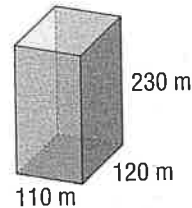
17.



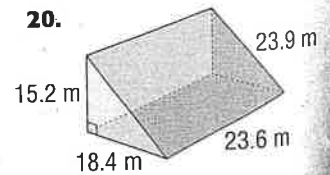
18.



19.



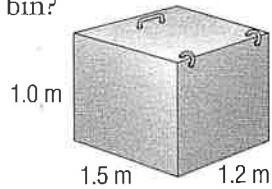
20.



Problems and Applications

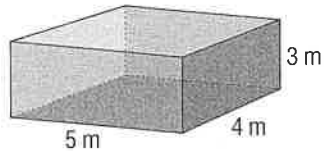
21. A covered garbage bin is to be built so that it measures 1.5 m by 1.2 m by 1.0 m.

a) How much plywood will it take to build the garbage bin?



b) How many cubic metres of garbage will it hold?

22. a) Calculate the surface area of this room.



b) One 4-L can of paint will cover 36 m^2 . If you want to give the ceiling and walls of the room 2 coats of paint, how many 4-L cans will you need? What assumptions have you made?

23. a) The dimensions of the base of a composter are 1 m by 1 m. Its height is 0.65 m. It is a prism with a top, a bottom, and 4 sides. Calculate its surface area.

b) The cost of material to build this composter is $\$9.98/\text{m}^2$. What is the total cost of the material?

c) If a town has set aside $\$1\,250\,000$ for the materials to build these composters, how many composters can be built?

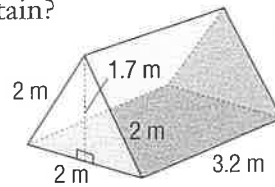
24. The surface area of a cube is 216 cm^2 . What are the dimensions of this cube?

25. a) A prism has a height of 10 cm. Find its surface area if the dimensions of the base are 8 cm by 2 cm.

b) Draw and label a diagram of the prism on dot paper or centimetre grid paper.

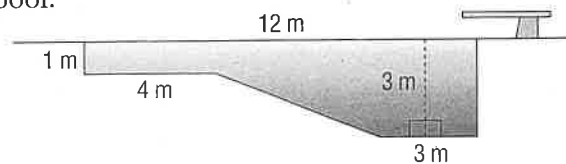
c) What is the name of the prism?

26. How many cubic metres of air does the tent contain?



27. Canada's Anik E1 is a domestic communications satellite. Launched in September, 1991, it is a rectangular prism with $l = 23 \text{ m}$, $w = 8.5 \text{ m}$, and $h = 4.3 \text{ m}$. Calculate the surface area and volume of Anik E1 to the nearest square or cubic unit.

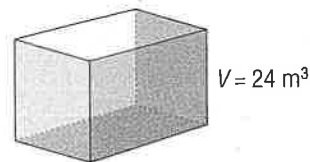
28. The diagram shows the side view of a pool.



a) The pool is 5 m wide. Calculate its volume.

b) A pump can drain water from the pool at $0.3 \text{ m}^3/\text{min}$. How long does it take to drain the pool?

29. A garden storage shed is to be built in the shape of a rectangular prism before the roof is added. The volume of the shed before the roof is put on is 24 m^3 . What are the most appropriate dimensions for the rectangular prism?



30. Work with a partner to calculate the surface area and volume of the interior of your classroom.

31. Write a problem that requires the calculation of the surface area and volume of a prism. Have another classmate solve your problem.

Chapter 7

Getting Started pp. 258–259

Activity 4: Small triangle, 1; square, parallelogram, medium triangle, 2; large triangle, 4 **Mental Math**

1. 31.4 2. 314 3. 3140 4. 31 400 5. 0.314
6. 0.0314 7. 0.003 14 8. 0.000 314 9. 0.125
10. 96 11. 98 12. 15 13. 120 14. 630 15. 52
16. 3.1 17. 3 18. 6 19. 18 20. 3 21. 5.5, 5.5
22. 4, 4 23. 6, 6 24. 10, 10 25. 12 26. 27
27. 75 28. 75 29. 18 30. 30 31. 90 32. 210
33. 24 34. 192 35. 3000 36. 375

Section 7.1 p. 261

1. 39.69 m^2 2. 36.12 cm^2 3. 113 cm^2 4. 88 cm^2
Problems and Applications 5. 44 m^2 6. 22.94 m^2
7. a) 32 cm^2 b) 6 m^2 8. a) 1.5 m^2 b) \$29.99
9. 708 m^2 10. square 11. 25 m^2

Section 7.2 p. 264

- Practice** 1. 54 cm^2 2. 64 cm^2 3. 42 cm^2
4. 137.5 m^2 5. 93 m^2 6. 192 cm^2 7. 39 cm^2
8. 3 cm^2 **Problems and Applications**
9. a) 60 cm^2 b) 40 cm^2 10. 140 cm 11. Front or Back: 1120 cm^2 , Side: 1504 cm^2 12. 4.5 cm
13. Area of each triangle is half the area of parallelogram or trapezoid. 14. 5 cm

Section 7.3 pp. 270–271

- Practice** 1. rectangular prism 2. triangular prism
3. square prism 4. triangular prism 5. square prism
6. triangular prism 7. 346 m^2 8. 43.6 cm^2
9. 150 cm^2 10. 958 m^2 11. 24 m^3 12. 180 cm^3
13. 1716 cm^3 14. 108 m^3 15. 278 m^2 , 198 m^3
16. 685 m^2 , 850 m^3 17. $12\,000 \text{ cm}^2$, $60\,000 \text{ cm}^3$
18. 150 cm^2 , 112 cm^3 19. $132\,200 \text{ m}^2$, $3\,036\,000 \text{ m}^3$
20. 1637 m^2 , 3300 m^3 **Problems and Applications**
21. a) 9 m^2 b) 1.8 m^3 22. a) 94 m^2 b) 5
23. a) 4.6 m^2 b) \$45.91 c) 27 227 24. 6 cm by 6 cm by 6 cm 25. a) 232 cm^2 c) rectangular prism
26. 5.44 m^3 27. 662 m^2 , 841 m^3 28. a) 115 m^3
b) approximately 6 h 23 min

Section 7.4 p. 274

- Practice** 1. 161 cm^2 2. 72 m^2 3. 64 cm^2
4. 175 m^2 5. 50 cm^3 6. 15 m^3 7. 240 m^3
8. 900 cm^3 **Problems and Applications**
9. 360 cm^3 10. $2\,574\,467 \text{ m}^3$ 11. a) doubles
b) triples c) doubles 12. $76\,000 \text{ m}^2$ including the base

Section 7.5 p. 278

- Practice** 1. 641 cm^2 2. 144 cm^2 3. 283 cm^2
4. 703 cm^2 5. 157 m^3 6. 7598.8 cm^3 7. 1570 cm^3
8. 37.68 m^3 9. 100.48 m^2 , 75.36 m^3 10. 75.36 cm^2 ,
 37.68 cm^3 **Problems and Applications**
11. a) 6.7 cm b) 91 cm^2 12. 16.4 m^2 13. 2 L
14. 8 m^3

Learning Together pp. 288–289

- Activity 3:** 5. 78.5 m^2 6. b) 743 m^2

Review pp. 292–293

- 1–11. Estimates may vary. 1. 39.69 cm^2
2. 30.66 m^2 3. 26.32 cm^2 4. 66.03 m^2 5. 1385 m^2
6. 77 cm^2 7. 4.8 m^3 8. 3.52 cm^2 9. 125.12 m^2
10. 78 m^2 11. a) 76 m^2 b) \$54.45 12. 288 cm^2
13. 21.4 m^2 14. 1734 m^2 15. 95.5 cm^2
16. 648 cm^3 17. $29\,335.5 \text{ cm}^3$ 18. 24.87 cm^2
19. 3014.4 m^2 20. 99 m^2 21. 1055.04 cm^2
22. 864 cm^3 23. 192 m^3 24. 707 m^3 25. 270 cm^3
26. 390 cm^3 27. a) 900 cm^2 b) 1220 cm^2
c) 1056 cm^3 28. 434 m^2 29. 334 cm^2 30. 62 m^2

Chapter Check p. 294

1. 900 cm^2 2. 100 cm^2 3. 27 cm^2 4. 314.16 m^2
5. 220 cm^2 6. 2512 cm^2 7. 3.84 m^2
8. 628 cm^2 9. 117 m^3 10. 1099 m^3 11. 22 m^3
12. $6\,510\,000 \text{ cm}^3$ 13. 23 m^2 14. 88 m^2 15. a) 16
b) 1.78 m^2 16. a) 216 cm^2 b) 180 cm^3 17. 3 cm
18. 266.25 cm^3

Using the Strategies p. 493

1. a) 9 b) 16 c) 25 d) 36 e) 625 f) 11 025
2. February, March 3. 1 cm^2 4. 47 5. 4624
6. 27 7. a) 6 b) 4 c) 2 8. 4 quarters; 3 quarters, 5
nickels; 2 quarters, 10 nickels; 1 quarter, 15 nickels;
20 nickels 9. 6 10. 32 cm 11. 05:55 **Data**
Bank 1. approximately 50 times

Chapter 8

Getting Started pp. 298–299

- Activity 2:** 1. a) flip b) turn c) slide **Activity 3:**
1. $\frac{1}{4}$ turn clockwise 2. vertical flip 3. horizontal
flip 4. $\frac{1}{4}$ turn clockwise, horizontal flip 5. $\frac{1}{2}$ turn
6. slide 7. $\frac{1}{4}$ turn clockwise, vertical flip 8. $\frac{1}{4}$
turn counterclockwise **Activity 4:** 1. a) flip