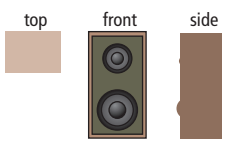
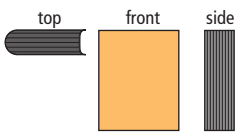
Chapter 5

5.1 Views of Three-Dimensional Objects, pages 168–169

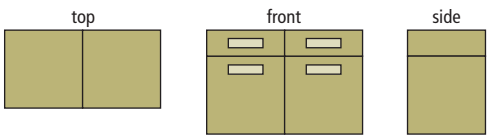
3. a)



b)



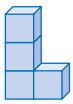
c)



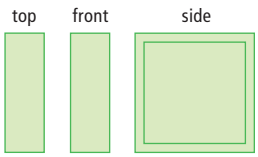
4. top view: D; front view: A; side view: B

5. a)

b)



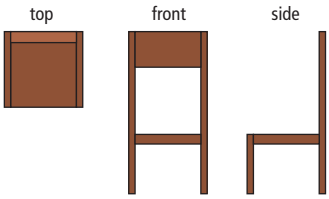
6. The new front view is the same as the original side view. The new top view is the same as the original top, but rotated 90° counterclockwise.



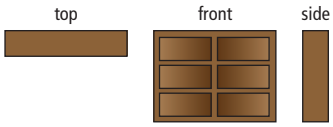
7. CD rack

8. Answers may vary. Example: a chair and a bookcase:

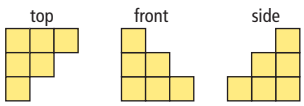
Chair:



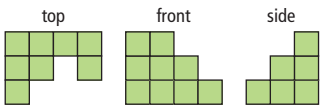
Bookcase:



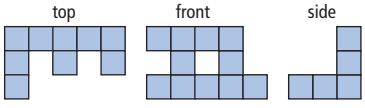
9. a)



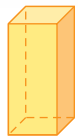
b)



c)

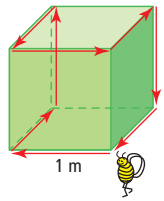


10. Answers may vary. Example: a cube and a square-based rectangular prism.



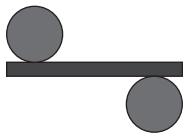
11. a) Answers may vary. Example:

b) 8 m



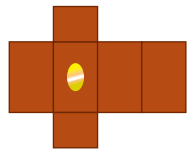
5.2 Nets of Three-Dimensional Objects, pages 173–175

3. a) Answers may vary. Example:

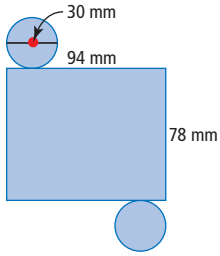


b) Answers may vary. Example:

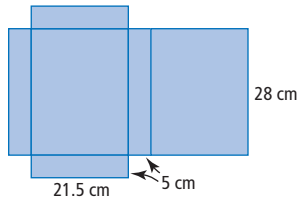
c) Answers may vary. Example:



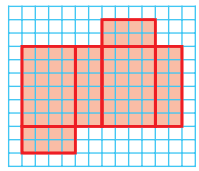
4. a) Answers may vary. Example:



b) Answers may vary. Example:



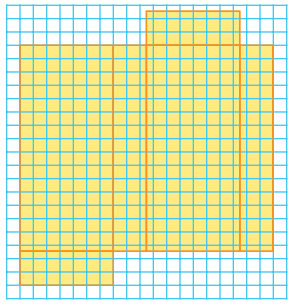
5. Answers may vary. Example:



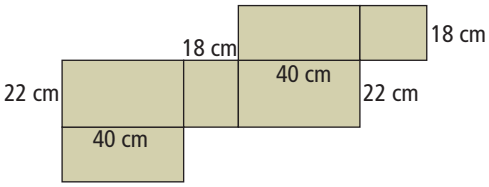
6. a) and **b)** triangular prism

7. rectangular prism: E; cylinder: B; triangular prism: C

8. Answers may vary. Example:

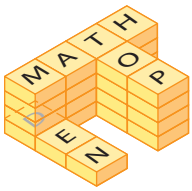


9. Answer may vary. Example:



10. a) and **b)** Both nets form the same triangular prism.

11. a) Answers may vary. Example:

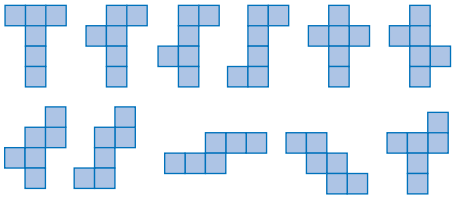


b) Answers may vary. Example:

M	A	T	H
E		O	
N		P	

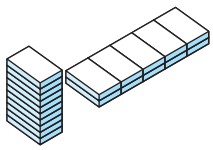
12. a) yellow **b)** green **c)** brown

13. There are 11 possible nets:



5.3 Surface Area of a Prism, pages 180–181

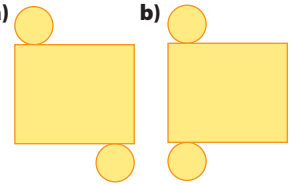
3. 819.5 cm^2
4. 397.0 cm^2
5. 7.7 m^2
6. 106.7 cm^2
7. 94 mm^2
8. a) 4 **b)** 6.36 m^2
9. Answers may vary. Example: 115 700 mm^2 (book cover of length 26 cm, width 21 cm, and thickness 2.5 cm)
10. 9.96 m^2
11. 70 m^2
12. The triangular prism would require less wrapping paper because its surface area of 770 cm^2 is less than the surface area of 1000 cm^2 of the rectangular prism.
13. 266 pans
14. a) 9 cm × 13.0 cm × 8.5 cm
b) Yes, these two sets of dimensions are possible: 9 cm × 6.5 cm × 17 cm and 9 cm × 32.5 cm × 3.4 cm.



15. a) 1 : 4 **b)** The ratio of the old surface area to the new surface area is 1 : 9. Yes, there is a pattern. The surface area is increased by a factor equal to the square of the multiplier of the edge length.
16. a) one 4-L can and two 1-L cans of wall paint plus one 4-L can of ceiling paint **b)** Answer may vary. Example: The paint costs $73.88. At a tax rate of 12% (GST and PST), the total cost would be $82.75.

5.4 Surface Area of a Cylinder, pages 186–187

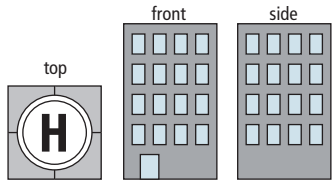
3. Answers may vary. Example:
a) **b)**



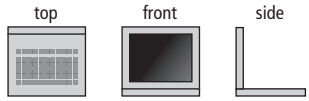
4. a) 736.3 cm^2 **b)** 2009.6 cm^2
5. a) 135.4 cm^2 **b)** 0.2 m^2
6. a) 88.31 cm^2 **b)** 149.15 cm^2
7. Answers may vary. Example: Use a formula. It is quicker, and you are less likely to miss part of the calculation.
8. 5604.9 cm^2
9. The 85-cm long container required more plastic. Its surface area of 3125.87 cm^2 is greater than the surface area of 2758.49 cm^2 of the other container.
10. 345.4 cm^2
11. 538.51 cm^2
12. 3228.31 mm^2
13. a) length: 251.2 cm; width: 21 cm **b)** 5275.2 cm^2

Chapter Review, pages 188–189

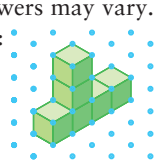
1. net
2. surface area
3. right prism
4. cylinder
5. triangular prism
6. rectangular prism
7. a) Answers may vary. Example:



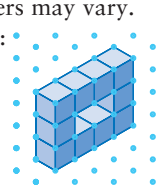
b) Answers may vary. Example:



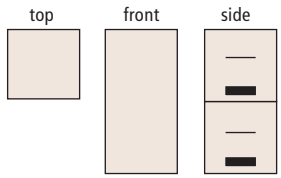
8. a) Answers may vary. Example:



b) Answers may vary. Example:

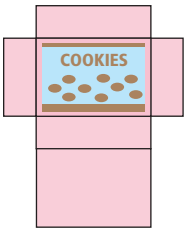


9. a) The new front view will be the same as the original side view. The new side view will be the same as the original front view. The new top view will be a 90° turn of the original top view.
b)

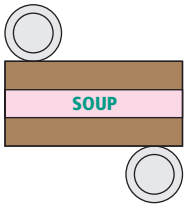


10. a) cylinder **b)** triangular prism **c)** rectangular prism

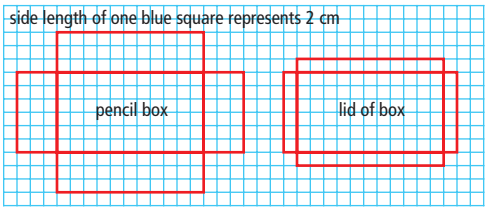
11. a) Answers may vary.
Example:



b) Answers may vary.
Example:



12. Answers may vary. Example:



13. a) 864 cm^2 **b)** 10.5 m^2

14. 3648 mm^2

15. a) 144 cm^2 **b)** 3865 cm^2

16. 5309 cm^2

17. 125.6 m^2

18. 92.9 cm^2

19. 19 939 cm^2