Geometry
Lesson 11-1 - Practice and Problem-Solving Exercises Answers

6. vertices: M, N, P, O
edges: $\overline{MN}$, $\overline{MP}$, $\overline{MO}$, $\overline{NP}$, $\overline{PO}$, $\overline{ON}$
faces: $\triangle MNP$, $\triangle MPO$, $\triangle NPO$, $\triangle MNO$

7. vertices: A, B, C, D, E, F, G, H
edges: $\overline{AB}$, $\overline{BC}$, $\overline{CD}$, $\overline{DA}$, $\overline{EF}$, $\overline{FG}$, $\overline{GH}$, $\overline{HE}$, $\overline{AE}$, $\overline{BF}$, $\overline{CG}$, $\overline{DH}$
faces: quadrilaterals $ABCD$, $EFGH$, $ABFE$, $BCGF$, $DCGH$, $ADHE$

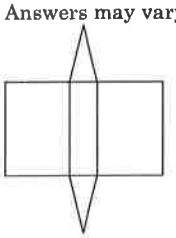
8. vertices: $P, Q, R, S, T, U, V, W, X, Y$
edges: $\overline{PQ}$, $\overline{QS}$, $\overline{ST}$, $\overline{TR}$, $\overline{RP}$, $\overline{UV}$, $\overline{VX}$, $\overline{XY}$, $\overline{YW}$, $\overline{WU}$, $\overline{PU}$, $\overline{QV}$, $\overline{SX}$, $\overline{TY}$, $\overline{RW}$
faces: quadrilaterals $STYX$, $RTYW$, $QSXV$, $PQVU$, $RWUP$, and pentagons $UVXYW$, and $PQRST$

9. 8

10. 12

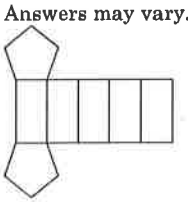
11. 12

15. $5 + 6 = 9 + 2$
Answers may vary. Sample:



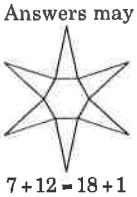
$5 + 10 = 14 + 1$

16. $7 + 10 = 15 + 2$
Answers may vary. Sample:



$7 + 18 = 24 + 1$

17. $7 + 7 = 12 + 2$
Answers may vary. Sample:



$7 + 12 = 18 + 1$

18. two concentric circles

19. triangle

20. rectangle

38a. A: icosahedron, B: octahedron, C: tetrahedron, D: hexahedron, E: dodecahedron

38b. regular triangular pyramid, cube

38c. $4 + 4 = 6 + 2$; $6 + 8 = 12 + 2$; $8 + 6 = 12 + 2$

7. $1726\ \text{cm}^2$

8. $216\ \text{ft}^2$

9. $(80 + 32\sqrt{2})$, or about $125.3\ \text{in.}^2$

11. $220\ \text{ft}^2$

12. $108\ \text{in.}^2$

13. $1121\ \text{cm}^2$

14. $82\ \text{in.}^2$

17. 40π cm^2

18. 16.5π cm^2

19. 101.5π in.^{2}

20. 236 in.^{2}

39. $(232 + 182\pi)$ cm^2.

40. $84 + 20\pi$ m^2

41. $(220 - 8\pi)$ in.^{2}

9. 408 $in.^2$

10. 138 m^2

11. 179 $in.^2$

12. 204 m^2

13. 354 cm^2

14. 51 m^2

15. 834,308 ft^2

16. 1044 in.^2

17. 31 m^2

18. 47 cm^2

19. $144\pi \text{ cm}^2$

20. $33\pi \text{ ft}^2$

21. $119\pi \text{ cm}^2$

26. 58 m^2

27. 471 ft^2

28. 45 m^2

6. $216\ ft^3$

7. $80\ in.^3$

8. $180\ m^3$

9. $14\ cm^3$

10. $162\sqrt{3}$, or about $280.6\ cm^3$

11. $22.5\ ft^3$

12. $720\ mm^3$

14. 288π in.^{3}, or about 904.8 in.^{3}

15. 40π cm^3, or about 125.7 cm^3

16. 37.5π m^3, or about 117.8 m^3

17. π yd^3, or about 3.1 yd^3

18a. a rectangular prism and half a cylinder

18b. $(528 + 72\pi)$ in.^{3}

18c. 754 in.^{3}

19. 144 cm^3

20. about 2725 in.^{3}

37. 125.7 cm^3

38. 98.2 in.^{3}

10. 300 $in.^3$

11. 2048 m^3

12. 363.6 m^3

13. 3714.5 mm^3

23. 123 $in.^3$

24. 312 cm^3

15. about 66.4 cm^3

16. about 4.7 cm^3

17. $\frac{16}{3}\pi$ ft^3, or about 17 ft^3

18. $\frac{22}{3}\pi$ $in.^3$, or about 23 $in.^3$

25. 10,368 ft^3

11. 441π cm^2

12. $\frac{1089}{256}\pi$ in.^{2}

15. Radius: about 1.27 cm
Surface area: about 20 cm^2

16. Radius: about 3.5 in.
Surface area: about 154 in.^{2}

17. $\frac{500}{3}\pi$ ft^3, or 524 ft^3

18. 288π cm^3, or 905 cm^3

23. about 451 in.^{2}

24. about 1006 m^2

46. Frozen yogurt: $\frac{256}{3}\pi$ cm^3
Cone: 64π cm^3
Since $\frac{256}{3}\pi > 64\pi$, the cone will overflow.

47. 38,792.4 ft^3

48. 148,250,000 km^2

49. $\frac{46}{3}\pi$ cm^3

50. $\frac{62}{3}\pi$ cm^3

51. $\frac{14}{3}\pi$ cm^3

5. No

6. Yes

7. Yes; the similarity ratio is 2:3.

8. No

9. Yes: the similarity ratio is 2:3.

10. Since a cylinder and square prism are not the same shape, they have no corresponding dimensions. So, no, they are not similar.

11. 5 : 6

12. 6 : 7

13. 3:4

14. 2:5

15. 240 $in.^3$

16. 180 m^3

17. 24 ft^3

18. 175 $in.^2$

19. 112 m^2

20. 325 yd^2