

Self-Test 1, Page 496

1. 162; 322; 360 2. 624; 1200; 960 3. $140\pi \text{ in.}^2$; $340\pi \text{ in.}^2$; $700\pi \text{ in.}^3$ 4. 180 cm^2 ;
 $(180 + 108\sqrt{3}) \text{ cm}^2$; $270\sqrt{3} \text{ cm}^3$ 5. 135π ; 216π ; 324π 6. 8000 m^3 7. 6 8. 6:5

Written Exercises, Pages 500–502

1. 196π ; $\frac{1372\pi}{3}$ 3. π ; $\frac{\pi}{6}$ 5. 4; $\frac{256\pi}{3}$ 7. 8π ; $\frac{8\pi\sqrt{2}}{3}$ 9. 4, 8 11. 1 cm 13. $21\pi \text{ cm}^2$
15. Vol. of hemisphere = $4 \cdot$ Vol. of sphere 17. 358 million km^2 19. $\frac{1750\pi}{3} \text{ m}^3$ 21. 6 cans
23. a. 32 cm b. cone: $8\pi\sqrt{1088} \approx 829$; sphere: $4\pi \cdot 8^2 \approx 804$ 25. $2\pi r^3$ 27. $\frac{4}{3}\pi r^3$
29. $81\pi \text{ in.}^2$; $121.5\pi \text{ in.}^3$ 31. a. $h = 2x$; $r^2 = 10^2 - x^2 = 100 - x^2$; $V = \pi r^2 h = \pi(100 - x^2)(2x) = 2\pi x(100 - x^2)$ b. $\frac{4000\pi\sqrt{3}}{9}$ 33. $144\pi \text{ cm}^2$

Mixed Review Exercises, Page 507

1. $\frac{2}{3}$ 2. 10 3. $x = 15$; $y = 6$; $z = 9$ 4. a. 32; 48 b. $\frac{2}{3}$ c. They are both $\frac{2}{3}$ 5. a. 48; 108
- b. $\frac{4}{9}$ c. $\frac{4}{9} = \left(\frac{2}{3}\right)^2$ 6. a. True b. False c. True d. False e. False f. True g. True h. False

Written Exercises, Pages 511–513

1. Yes 3. a. 3:4 b. 3:4 c. 9:16 d. 27:64 5. a. 4:1 b. 16:1 c. 64:1 7. a. 2:3 b. 2:3
 c. 4:9 9. Paint for actual airplane = 40,000 times paint for model 11. $81\pi \text{ cm}^2$ 13. 18.5 kg
15. the larger ball 17. 108 ft^3 19. a. 9:16 b. 9:16 c. 9:7 d. 27:64 e. 27:37
21. 54 cm^3 ; 196 cm^3 23. $\frac{4}{3}\pi a^3$; $\frac{4}{3}\pi b^3 = a^3:b^3$ 25. $r_1:r_2 = l_1:l_2$
- L.A.₁:L.A.₂ = $\pi r_1 l_1$: $\pi r_2 l_2 = r_1^2:r_2^2$ 27. $B_1:B_2 = e_1^2:e_2^2$; $h_1:h_2 = e_1:e_2$;
 $V_1:V_2 = B_1 h_1:B_2 h_2 = e_1^2 e_1:e_2^2 e_2 = e_1^3:e_2^3$ 29. $6\sqrt[4]{4}$

Self-Test 2, Page 513

1. $36\pi \text{ cm}^2$; $36\pi \text{ cm}^3$ 2. $16\pi \text{ m}^2$ 3. $\frac{22,000\pi}{3} \text{ cm}^3$ 4. $25\pi \text{ cm}^2$ 5. a. $\frac{16}{3}$ b. 9:4 6. a. 2:5
 b. 8:125

Extra, Page 517

1. 22 3. $\frac{56\pi}{3}$ 5. 8 cm^2

Chapter Review, Pages 518–519

1. lateral edge 3. 236; 240 5. $\frac{160\sqrt{3}}{3}$ 7. 900; 1020; 17 9. 24π ; 56π 11. $2\sqrt{10} \text{ cm}$
13. 616 m^2 15. $\frac{5324\pi}{3} \text{ cm}^3$ 17. 1:9 19. 64:27

Preparing for College Entrance Exams, Page 520

1. A 2. C 3. E 4. D 5. B 6. C 7. B

Cumulative Review, Page 521

1. True 3. False 5. False 7. False 9. True 11. Key steps of proof: 1. $\triangle WXY \cong \triangle YZW$ (HL) 2. $\angle XYW \cong \angle ZWY$ (CPCT) 3. $\overline{WZ} \parallel \overline{XY}$ (If alt. int. $\angle \cong$, lines \parallel .) 13. a. $AA \sim$
 b. If $\triangle JKL \sim \triangle XYZ$, then $\angle J \cong \angle X$ and $\angle K \cong \angle Y$. True 15. 8 17. 8 19. $125\pi \text{ cm}^3$