

Chapter 13

Written Exercises, Pages 526–528

1. 7 3. 4 5. $\sqrt{10}$ 7. 10 9. $2\sqrt{13}$ 11. $5\sqrt{2}$ 13. Yes; A 15. No 17. $(-3, 0); 7$
 19. $(j, -14); \sqrt{17}$ 21. $(x-3)^2 + y^2 = 64$ 23. $(x+4)^2 + (y+7)^2 = 25$ 27. $AM = AY = 3\sqrt{5}$
 29. $\frac{JA}{RF} = \frac{6}{3} = \frac{2}{1}$; $\frac{AN}{FK} = \frac{2\sqrt{5}}{\sqrt{5}} = \frac{2}{1}$; $\frac{JN}{RK} = \frac{4\sqrt{2}}{2\sqrt{2}} = \frac{2}{1}$. The Δ are \sim by SSS \sim Thm. 31. 39 33. $(10, 0)$,
 $(6, 8)$, $(8, 6)$, $(0, 10)$, $(-6, 8)$, $(-8, 6)$, $(-10, 0)$, $(6, -8)$, $(8, -6)$, $(0, -10)$, $(-6, -8)$, $(-8, -6)$
 35. $x^2 + (y-6)^2 = 100$ 37. $x^2 + (y-2)^2 = 9$ 39. a. 5; 10 b. 15 c. Dist. between ctrs. = sum
 of radii. 41. Quad. $RAYJ$ is a \square . 43. 15, 5, 2, -1, -11 45. $(-2, 4); 6$

Written Exercises, Pages 532–534

1. a. k b. n, r c. l, x -axis d. s, y -axis 3. 1 5. -1 7. -1 9. 0 11. $\frac{3}{2}$
 13. $-\frac{2}{5}; 2\sqrt{29}$ 15. $\frac{3}{4}; 10$ Answers will vary in Exs. 17–19. Examples are given.
 17. $(-8, -2), (2, 2)$ 19. $(-4, -4), (4, -6)$ 21. Slope of \overline{PQ} = slope of \overline{QR} = $-\frac{1}{3}$ 23. 9
 25. $m(r-p) + q$ 27. a. SAS b. $m\angle BOS = m\angle BOR + m\angle ROS = m\angle BOR + m\angle AOB = 90$
 c. -1 29. a. $RS = \sqrt{58}$; $RT = 2\sqrt{2}$; $ST = 5\sqrt{2}$ b. $(RT)^2 + (ST)^2 = 8 + 50 = 58 = (RS)^2$ c. -1
 31. 1 33. $a = 2\sqrt{3} + 1$

Algebra Review, Page 534

1. -216 3. $\frac{1}{9}$ 5. $-\frac{1}{64}$ 7. $\frac{27}{125}$ 9. 1 11. 2 13. r^{13} 15. r^5 17. 1 19. b^8
 21. $6y^6$ 23. $5b^4$

Written Exercises, Pages 537–538

1. a. $\frac{2}{3}$ b. $\frac{2}{3}$ c. $-\frac{3}{2}$ 3. $\frac{7}{2}; \frac{7}{2}; 0$ 5. a. -3; -3 b. Slope of \overline{LM} = slope of \overline{PN} c. $\frac{1}{3}; -\frac{1}{7}$
 d. Slope of $\overline{MN} \neq$ slope of \overline{LP} e. trap. 7. Slope of $\overline{AC} = -\frac{5}{2}$, slope of $\overline{AB} = \frac{3}{7}$, slope of $\overline{BC} = \frac{8}{5}$; slope
 of alt. to $\overline{AC} = \frac{2}{5}$, slope of alt. to $\overline{AB} = -\frac{7}{3}$, slope of alt. to $\overline{BC} = -\frac{5}{8}$ 9. Slope of $\overline{RS} = \frac{6}{5}$, slope of $\overline{ST} =$
 $-\frac{5}{6}$; $\frac{6}{5}(-\frac{5}{6}) = -1$ 11. a. Slope of $\overline{AB} = \frac{2 - (-4)}{4 - (-6)} = \frac{3}{5}$, and slope of $\overline{DC} = \frac{8 - 2}{6 - (-4)} = \frac{3}{5}$; $\overline{AB} \parallel \overline{DC}$.
 Slope of $\overline{AD} = \frac{2 - (-4)}{-4 - (-6)} = 3$, slope of $\overline{BC} = \frac{8 - 2}{6 - 4} = 3$; $\overline{AD} \parallel \overline{BC}$. b. $AB = 2\sqrt{34} = DC$, $AD = 2\sqrt{10} =$
 BC 13. a. Slope of $\overline{RS} =$ slope of $\overline{UT} = \frac{4}{3}$; slope of $\overline{RU} =$ slope of $\overline{ST} = -\frac{3}{4}$; $RSTU$ is a \square . $\overline{RS} \perp \overline{RU}$, so
 $RSTU$ is a rect. b. $RT = US = 5\sqrt{5}$ 15. trap. 17. rect. 19. $\frac{3}{4}$ 21. a. True b. True c. True

Written Exercises, Pages 541–543

1.
 $\overline{AB} = (4, 3)$ 3. $(-2, 2); 2\sqrt{2}$
 $|\overline{AB}| = 5$ 5. $(-4, 2); 2\sqrt{5}$
 7. $(5, -9); \sqrt{106}$
 9. $(-3, -6); 3\sqrt{5}$

