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 \triangle 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 $\overline{PQ} = \text{slope of } \overline{QR} = -\frac{1}{3}$ 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.** $a = 2\sqrt{3} + 1$

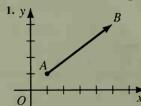
Algebra Review, Page 534

- 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^{6}
- **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; 0 **5. a.** -3; -3 **b.** Slope of \overline{LM} = slope of \overline{PN} **c.** $\frac{1}{3}$; $-\frac{1}{7}$
- **d.** Slope of $\overline{MN} \neq \text{slope}$ 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.** $AB = 2\sqrt{34} = DC$, $AD = 2\sqrt{10} = 1$
- 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



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

