Written Exercises, Pages 555–556

1. $y = 2x + 5$ **3.** $y = \frac{1}{2}x - 8$ **5.** $y = -\frac{7}{5}x + 8$ **7.** $y = -\frac{1}{4}x + 2$ **9.** $y = \frac{1}{2}x + 4$

11. $y - 2 = 5(x - 1)$ **13.** $y - 5 = \frac{1}{3}(x + 3)$ **15.** $y = -\frac{1}{2}(x + 4)$ **17.** $y = 2x - 1$

19. $y = \frac{1}{3}x + 2$ **21.** $x = 2$ **23.** $x = 5$ **25.** $y - 7 = 3(x - 5)$ **27.** $5x + 8y = -31$

29. $y = -\frac{5}{3}x + \frac{34}{3}$ **31.** $y = x$ **33.** $\frac{2}{3}$ or $-\frac{2}{3}$ **35.** $(2, 0)$ **37. a.** $y = x$, $x = 3$, $x + 2y = 9$ **b.** $C(3, 3)$ **c.** $CQ = CR = CS = 3\sqrt{10}$ **d.** $(x - 3)^2 + (y - 3)^2 = 90$ **39. a.** slope of $\overline{CG} = -1 =$ slope of $\overline{GH}$ **b.** $GH = 2\sqrt{2}$, $GC = \sqrt{2}$

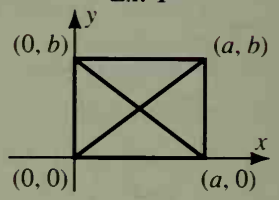
Written Exercises, Pages 558–559

1. $(0, b)$, $(a, 0)$ **3.** $(-f, 2f)$, $(f, 2f)$ **5.** $(h + m, n)$ **7.** $\left(\frac{s}{2}, \frac{s\sqrt{3}}{2}\right)$ **9.** $(\sqrt{a^2 - b^2}, b)$, $(\sqrt{a^2 - b^2} + a, b)$

Written Exercises, Pages 562–563

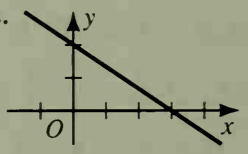
1. Plan for proof: Use the distance formula twice to show that the length of each diag. is $\sqrt{a^2 + b^2}$. **5.** Plan for proof: Find the coords. of the midpts. G and H of $\overline{NP}$ and $\overline{MO}$, resp. Use slopes to show that $\overline{NM} \parallel \overline{GH} \parallel \overline{OP}$. Use the Dist. Formula to show that $GH = \frac{1}{2}(OP - NM)$. **9.** Plan for proof: Use the eq. of the $\odot$ to show that $b^2 - a^2 = -c^2$. Then use slopes to show that $\overline{CA} \perp \overline{CB}$.

Ex. 1



Self-Test 2, Page 563

1. $\frac{2}{5}$; -4 **2.**



3. $y = -\frac{1}{2}x + \frac{5}{2}$ **4.** $y = 5$ **5.** $(1, -1)$ **6.** $(2e, 0)$ **7.** $(c + g, h)$ **8.** $(c - g, h)$ **9.** slope of $\overline{GO} =$ slope of $\overline{LD} = -\frac{1}{4}$; slope of $\overline{OL} =$ slope of $\overline{DG} = 3$

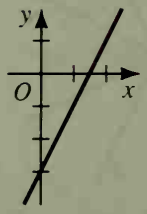
Extra, Page 565

1. y-axis **3.** x-axis **5.** xy-plane **7.** yz-plane

Chapter Review, Page 567

1. $4\sqrt{5}$; 10; $2\sqrt{5}$ **3.** $(-3, 0)$; 10 **5.** $(x + 6)^2 + (y + 1)^2 = 9$ **7.** -19 **9.** 0 **11.** $\frac{3}{4}$, $-\frac{4}{3}$

13. a. $(4, 3)$ **b.** 5 **c.** $(-8, -6)$ **15.** $\left(4, -\frac{3}{2}\right)$ **17.** $(0, b)$ **19.**



21. $(2, 1)$ **23.** $y = 2x + 4$ **25.** $M\left(\frac{a}{2} + b, c\right)$, $N\left(\frac{a}{2}, 0\right)$; slope of $\overline{ON} = 0 =$ slope of $\overline{MQ}$, $\overline{ON} \parallel \overline{MQ}$; slope of $\overline{OM} = \frac{2c}{a + 2b} =$ slope of $\overline{NQ}$, $\overline{OM} \parallel \overline{NQ}$

Cumulative Review, Page 569

1. obtuse **3.** No; no; draw a fig. in which the diags. do not bis. each other. **5. a.** Since $\angle AEB \cong \angle CED$ (Vert. $\measuredangle \cong$.) and $\frac{AE}{CE} = \frac{BE}{DE}$, $\triangle AEB \sim \triangle CED$ (SAS$\sim$); therefore $\angle B \cong \angle D$ (Corr. $\measuredangle$ of $\sim$ $\measuredangle$ are $\cong$.). **b.** $x = 18$ **c.** 4:9 **7. a.** $\frac{1}{3}$ **b.** $\frac{1}{3}$ **c.** $2\sqrt{2}$ **d.** $\frac{2\sqrt{2}}{3}$ **9.** 364π; 820π **11.** $6\frac{2}{3}$ **13.** 89