

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. $(\frac{s}{2}, \frac{s\sqrt{3}}{2})$ 9. $(\sqrt{a^2 - b^2}, b),$
 $(\sqrt{a^2 - b^2} + a, b)$

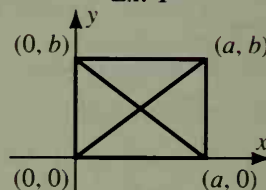
Written Exercises, Pages 562–563

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. $(4, -\frac{3}{2})$ 17. $(0, b)$ 19. 21. $(2, 1)$ 23. $y = 2x + 4$ 25. $M(\frac{a}{2} + b, c), N(\frac{a}{2}, 0);$

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. $\angle \cong$.) and $\frac{AE}{CE} = \frac{BE}{DE}$, $\triangle AEB \sim \triangle CED$ (SAS \sim); therefore $\angle B \cong \angle D$ (Corr. \angle of $\sim \triangle$ 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. $364\pi; 820\pi$ 11. $\frac{6}{3}$ 13. 89