

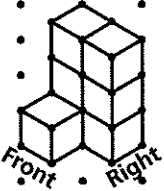
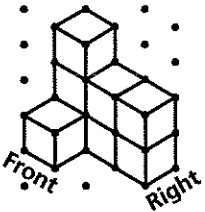
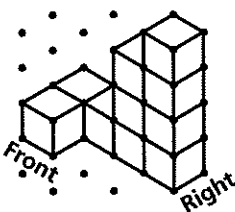
Exam Review Answers

Chapter 1 Answers



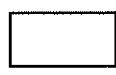
Practice 1-1

1. 47, 53 2. 1.00001, 1.00001 3. 42, 54 4. -64, 128
 5. 22, 29 6. 63.5, 63.75 7. Sample: 2 or 3 8. 51
 or 49 9. 6 or 8 10. A or AA 11. D or G
 12. Y or A 13. any hexagon 14. circle with 8 equally
 spaced diameters 15. a 168.75° angle 16. 21 hand-
 shakes 17. $h = \frac{n(n-1)}{2}$ 18. 34 19. Sample: The
 farther out you go, the closer the ratio gets to a number that is
 approximately 0.618. 20. 0, 1, 1, 2, 3, 5, 8, 13

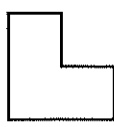
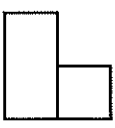
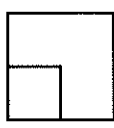
Practice 1-2

1. 
2. 
3. 
4.

1	1	1
1	1	1

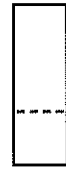
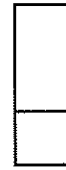
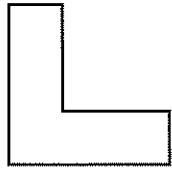
 Front Right
-   
5.

2	
2	1

 Front Right
-   

6.

1
1
3

 Right
-   
- Front Front Top Right

7. A, C, D 8. C 9. D 10. B 11. A

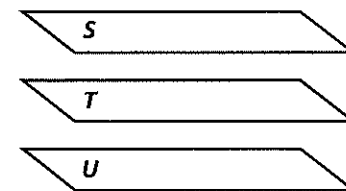
Practice 1-3

1. \overleftrightarrow{AC} 2. any two of the following: ABD , DBC , CBE ,
 ABE , ECD , ADE , ACE , ACD 3. Points E , B , and D
 are collinear. 4. yes 5. yes 6. no 7. no
 8. yes 9. no 10. yes 11. yes 12. yes
 13. no 14. yes 15. yes 16. G 17. \overleftrightarrow{LM}
 18. \overleftrightarrow{PN} 19. the empty set 20. \overleftrightarrow{KP} 21. M
 22. Sample: plane ABD 23. Sample: plane ABC
 24. \overleftrightarrow{AB} 25. yes 26. no 27. yes
 28. the empty set 29. no 30. yes 31. yes

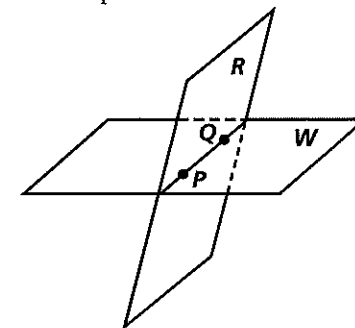
Practice 1-4

1. true 2. false 3. true 4. false 5. false
 6. false 7. \overleftrightarrow{JK} , \overleftrightarrow{HG} 8. \overleftrightarrow{EH} 9. any three of the
 following pairs: \overleftrightarrow{EF} and \overleftrightarrow{JH} ; \overleftrightarrow{EF} and \overleftrightarrow{GK} ; \overleftrightarrow{HG} and \overleftrightarrow{JE} ;
 \overleftrightarrow{HG} and \overleftrightarrow{FK} ; \overleftrightarrow{JK} and \overleftrightarrow{EH} ; \overleftrightarrow{JK} and \overleftrightarrow{FG} ; \overleftrightarrow{EJ} and \overleftrightarrow{FG} ; \overleftrightarrow{EH}
 and \overleftrightarrow{FK} ; \overleftrightarrow{JE} and \overleftrightarrow{KG} ; \overleftrightarrow{EH} and \overleftrightarrow{KG} ; \overleftrightarrow{JH} and \overleftrightarrow{KF} ; \overleftrightarrow{JH} and
 \overleftrightarrow{GE} 10. planes A and B 11. planes A and C ; planes
 B and C 12. planes A and C 13. planes B and C
 14. Sample: \overleftrightarrow{EG} 15. 6 16. \overleftrightarrow{EF} and \overleftrightarrow{ED} or \overleftrightarrow{EG} and
 \overleftrightarrow{ED} 17. \overleftrightarrow{FE} , \overleftrightarrow{FD} 18. \overleftrightarrow{GF} , \overleftrightarrow{GD} 19. yes

20. Sample:



21. Sample:



Chapter 1 Answers (continued)

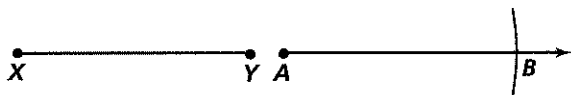
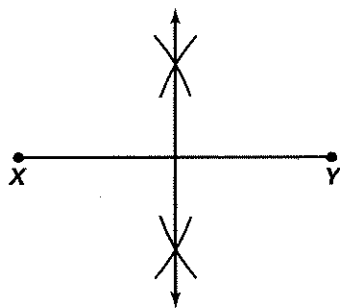
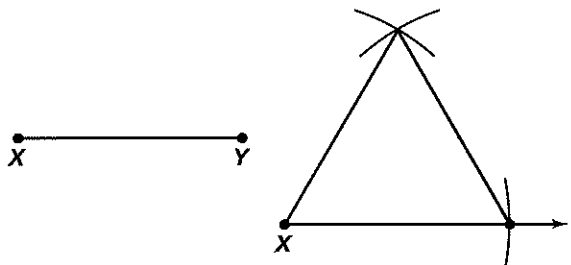
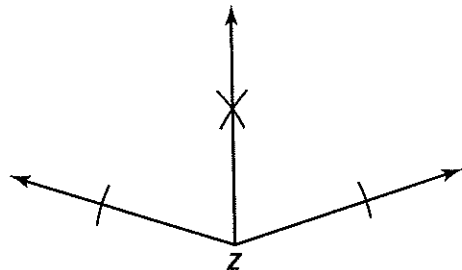
Practice 1-5

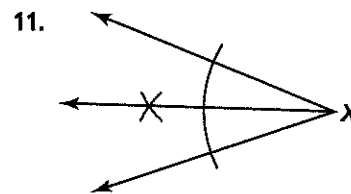
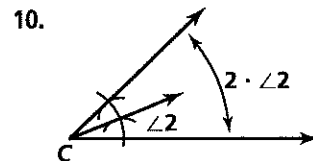
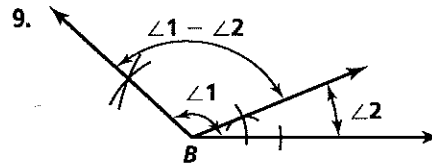
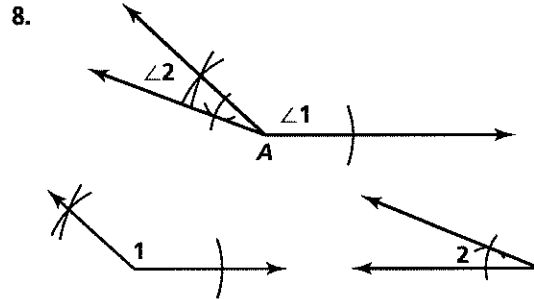
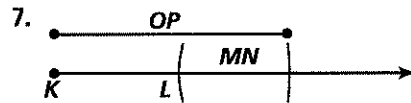
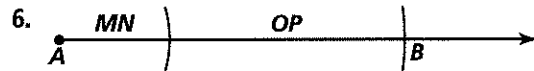
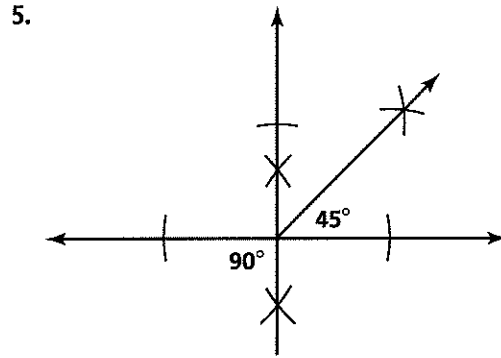
1. 4 2. 12 3. 20 4. 6 5. 22 6. -10 or 6
 7. -1 or 1 8. 3; 4; no 9. 6; 6; yes 10. C or -2
 11. 15 12. 31 13. 14 14. $x = 11\frac{2}{3}$; $AB = 31$;
 $BC = 31$ 15. $x = 35\frac{2}{3}$; $AB = 103$; $BC = 103$

Practice 1-6

1. any three of the following: $\angle O$, $\angle MOP$, $\angle POM$, $\angle 1$
 2. $\angle AOB$ 3. $\angle EOC$ 4. $\angle DOC$ 5. 51 6. 90
 7. 17 8. 107 9. 141 10. 68 11. $\angle ABD$, $\angle DBE$,
 $\angle EBF$, $\angle DBF$, $\angle FBC$ 12. $\angle ABF$, $\angle DBC$ 13. $\angle ABE$,
 $\angle EBC$ 14. $x = 5$; 8; 21; 13 15. $x = 9$; 85; 35; 120

Practice 1-7

1. 
2. 
3. 
4. 



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Chapter 3 Answers

Practice 3-1

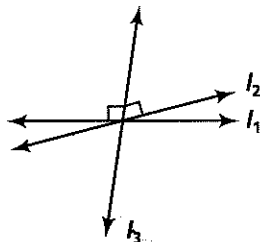
- corresponding angles
- alternate interior angles
- same-side interior angles
- alternate interior angles
- same-side interior angles
- corresponding angles
- $\angle 1$ and $\angle 5$, $\angle 2$ and $\angle 6$, $\angle 3$ and $\angle 8$, $\angle 4$ and $\angle 7$
- $\angle 4$ and $\angle 6$, $\angle 3$ and $\angle 5$
- $\angle 4$ and $\angle 5$, $\angle 3$ and $\angle 6$
- $m\angle 1 = 100$, alternate interior angles; $m\angle 2 = 100$, corresponding angles or vertical angles
- $m\angle 1 = 75$, alternate interior angles; $m\angle 2 = 75$, vertical angles or corresponding angles
- $m\angle 1 = 135$, vertical angles; $m\angle 2 = 135$, vertical angles
- $x = 103$; 77° , 103°
- $x = 24$; 12° , 168°
- $x = 30$; 85° , 85°
- Alternate Interior Angles Theorem
- Vertical angles are congruent.
- Transitive Property of Congruence

Practice 3-2

- same-side interior
- \overrightarrow{QR}
- \overrightarrow{TS}
- same-side interior
- Same-Side Interior Angles
- \overrightarrow{TS}
- 3-5
- l and m , Converse of Same-Side Interior Angles Theorem
- none
- \overline{BC} and \overline{AD} , Converse of Same-Side Interior Angles Theorem
- \overline{RT} and \overline{HU} , Converse of Corresponding Angles Postulate
- \overline{BH} and \overline{CI} , Converse of Corresponding Angles Postulate
- a and b , Converse of Same-Side Interior Angles Theorem
- 43
- 90
- 38
- 100
- 70
- 48

Practice 3-3

- True. Every avenue will be parallel to Founders Avenue, and therefore every avenue will be perpendicular to Center City Boulevard, and therefore every avenue will be perpendicular to any street that is parallel to Center City Boulevard.
- Not necessarily true. No information has been given about the spacing of the streets.
- True. The fact that one intersection is perpendicular, plus the fact that every street belongs to one of two groups of parallel streets, is enough to guarantee that all intersections are perpendicular.
- True. Opposite sides of each block must be of the same type (avenue or boulevard), and adjacent sides must be of opposite type.
- Not necessarily true. If there are more than three avenues and more than three boulevards, there will be some blocks bordered by neither Center City Boulevard nor Founders Avenue.
- $a \perp e$
- $a \parallel e$
- $a \parallel e$
- $a \perp e$
- $a \perp e$
- $a \parallel e$
- If the number of \perp statements is even, then $\ell_1 \parallel \ell_n$. If it is odd, then $\ell_1 \perp \ell_n$.
- The proof can instead use alternate interior angles or alternate exterior angles (if the angles are congruent, the lines are parallel) or same-side interior or same-side exterior angles (if the angles are supplementary, the lines are parallel).
- It is possible.



Practice 3-4

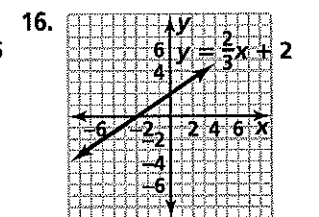
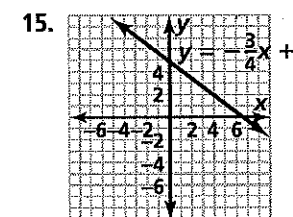
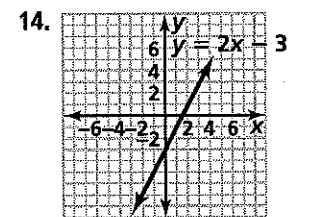
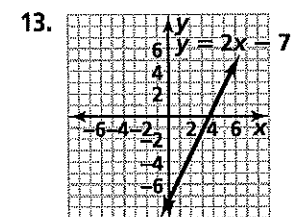
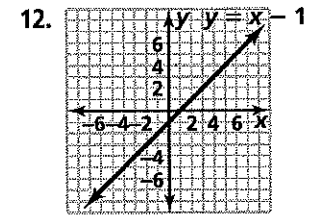
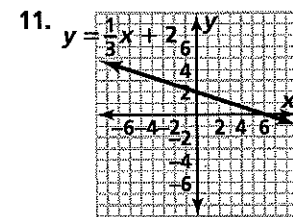
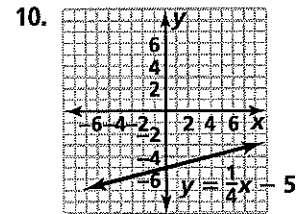
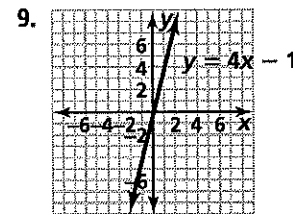
- 125
- 69
- 143
- 129
- 140
- 136
- $x = 35$; $y = 145$; $z = 25$
- $a = 55$; $b = 97$; $c = 83$
- $v = 118$; $w = 37$; $t = 62$
- 50
- 88
- $m\angle 3 = 22$; $m\angle 4 = 22$; $m\angle 5 = 88$
- 57.1
- 136
- $m\angle 1 = 33$; $m\angle 2 = 52$
- isosceles
- obtuse scalene
- right scalene
- obtuse isosceles
- equiangular equilateral

Practice 3-5

- $x = 120$; $y = 60$
- $n = 51\frac{3}{7}$
- $a = 108$; $b = 72$
- 109
- 133
- 129
- 129
- 47
- 127
- 30
- 150
- 6
- 5
14. 8
- $BEDC$
- $\angle FAE$
- $\angle FAE$ and $\angle BAE$
- $ABCDE$
- 20

Practice 3-6

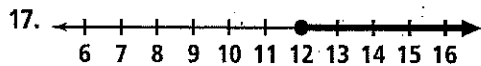
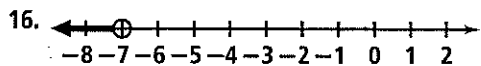
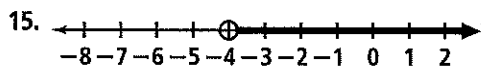
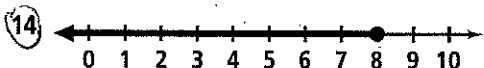
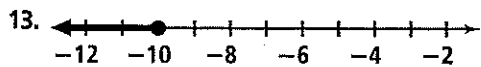
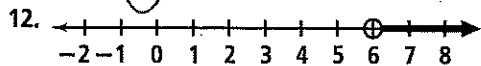
- $y = \frac{1}{3}x - 7$
- $y = -2x + 12$
- $y = 7x - 18$
- $y = -\frac{1}{2}x - 3$
- $y = \frac{1}{6}x - \frac{3}{2}$
- $y = \frac{4}{3}x - 2$
- $y = 4x - 13$
- $y = -x + 6$



Chapter 4 Answers

Practice 4-1

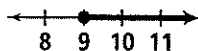
- 1a. yes 1b. no 1c. yes 2a. no 2b. yes 2c. yes
 3a. no 3b. yes 3c. no 4a. yes 4b. yes 4c. yes
 5a. no 5b. yes 5c. yes 6a. no 6b. yes 6c. no
 7a. no 7b. yes 7c. no 8. $x > -5$ 9. $x \leq -5$
 10. $x < 3$ 11. $x \geq -8$



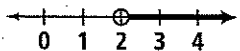
18. Let t = temperature (in degrees Fahrenheit); $t \leq 38$
 19. Let w = weight (in lb); $w \leq 2000$
 20. Let n = number of students; $n \geq 20$
 21. Let n = number of people; $n \leq 250$
 22. Let s = speed (in mi/h); $s \leq 55$
 23. Let n = number of points; $450 \leq n \leq 500$
 24. Let c = circumference (in in.); $c \geq 9.00$
 25. C 26. D 27. B 28. A

Practice 4-2

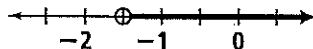
1. $n \geq 9$;



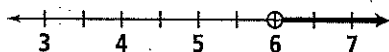
2. $y > 2$;



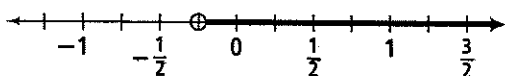
3. $r > -1.5$;



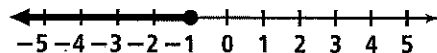
4. $b > 6$;



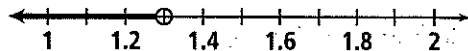
5. $n > \frac{1}{4}$



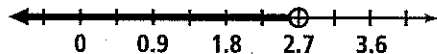
6. $c \leq -1$;



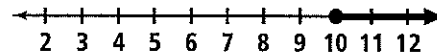
7. $g < 1.3$;



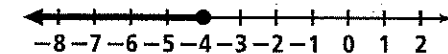
8. $d < 2.7$;



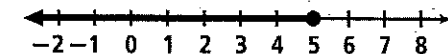
9. $f \geq 10$;



10. $x \leq -4$;



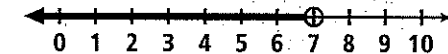
11. $d \leq 5$;



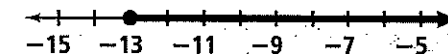
12. $m \geq -1$;



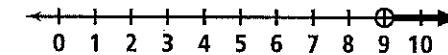
13. $v < 7$;



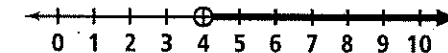
14. $t \geq -13$;



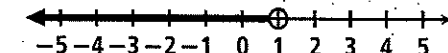
15. $y > 9$;



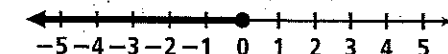
16. $a > 4$;



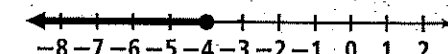
17. $d < 1$;



18. $s \leq 0$;



19. $h \leq -4$;



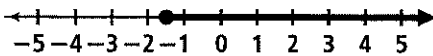
Chapter 4 Answers (continued)

20. $t \leq 10$;

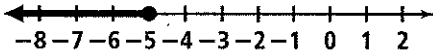


21. $n + 94 + 82 + 87 - 2 \geq 360$, where n = number of points; at least 99 points
 22. $n + 125 \geq 140$, where n = number of at-bats; at least 15 at-bats
 23. $s + 19 - 5 \geq 32$, where s = average wind speed at 8 A.M.; 18 mi/h
 24. $t + 13.5 \leq 25$, where t = time in minutes; 11.5 min
 25. $n + 3.5 \geq 5$, where n = number of miles; at least 1.5 mi
 26. $1058 + 44.50 - w \geq 1000$, where w = amount of money withdrawn; \$102.50

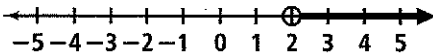
27. $z \geq -1\frac{1}{2}$;



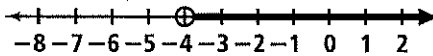
28. $d \leq -5$;



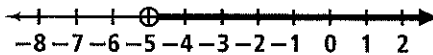
29. $v > 2$;



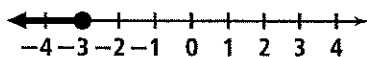
30. $m > -4$;



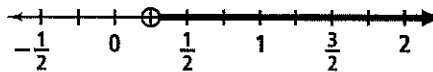
31. $f > -5$;



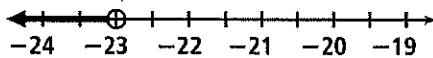
32. $w \leq -3$;



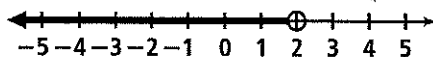
33. $b > \frac{1}{4}$;



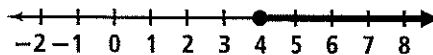
34. $t < -23$;



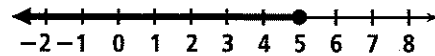
35. $u < 2$;



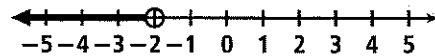
36. $z \geq 4$;



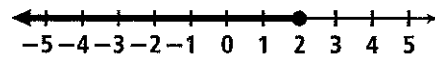
37. $b \leq 5$;



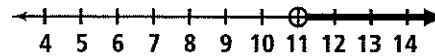
38. $k < -2$;



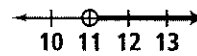
39. $a \leq 2$;



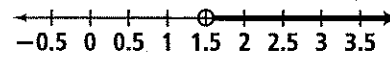
40. $b > 11$;



41. $k > 11$;

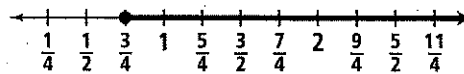


42. $j > 1.5$;

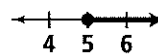


Practice 4-3

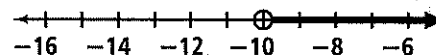
1. $s \geq \frac{3}{4}$;



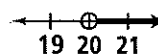
2. $b \geq 5$;



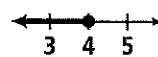
3. $r > -10$;



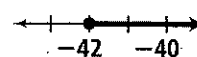
4. $n > 20$;



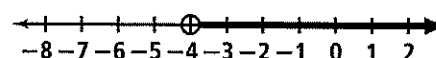
5. $n \leq 4$;



6. $n \geq -42$;



7. $c > -4$;

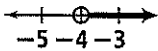


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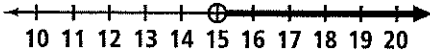
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Chapter 4 Answers (continued)

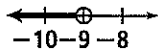
8. $d > -4$;



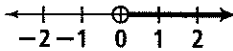
9. $t > 15$;



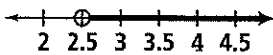
10. $k < -9$;



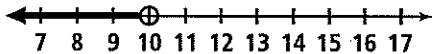
11. $w > 0$;



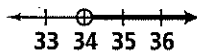
12. $v > 2.5$;



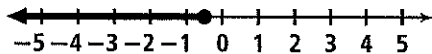
13. $m < 10$;



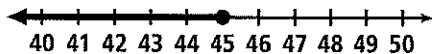
14. $p > 34$;



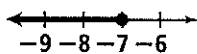
15. $v \leq -0.5$;



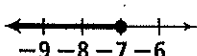
16. $x \leq 45$;



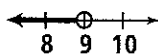
17. $d \leq -7$;



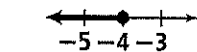
18. $x \leq -7$;



19. $c < 9$;



20. $a \leq -4$;



21. $8h \leq 40$, where h = number of hours; 5 hours

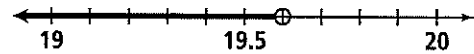
22. $7n \geq 28$, where n = number of vans; 4 vans

23. $34n \leq 3.84$, where n = number of stamps; 11 stamps

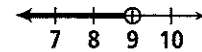
24. $0.5n \leq 31$, where n = number of bricks; 62 bricks

25. $5.5s \geq 275$, where s = speed in mi/h; 50 mi/h

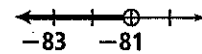
26. $h < 19.6$;



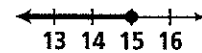
27. $x < 9$;



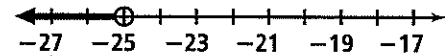
28. $a < -81$;



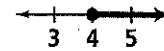
29. $b \leq 15$;



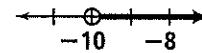
30. $q < -25$;



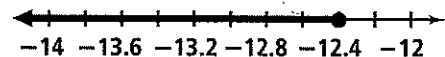
31. $b \geq 4$;



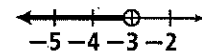
32. $c > -10$;



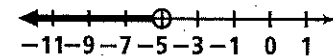
33. $b \leq -12.4$;



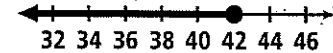
34. $p < -3$;



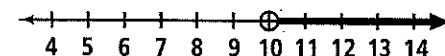
35. $z < -5$;



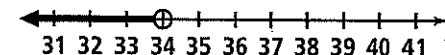
36. $y \leq 42$;



37. $k > 10$;

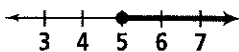


38. $y < 34$;

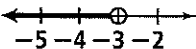


Chapter 4 Answers (continued)

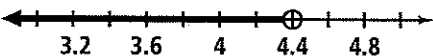
39. $b \geq 5$;



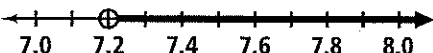
40. $k < -3$;



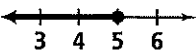
41. $d < 4.4$;



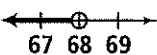
42. $v > 7.2$;



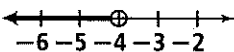
43. $n \leq 5$;



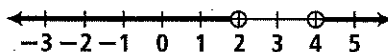
44. $y < 68$;



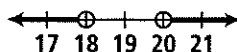
45. $k < -4$;



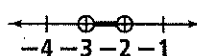
3. $k > 4$ or $k < 2$;



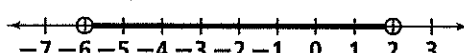
4. $b > 20$ or $b < 18$;



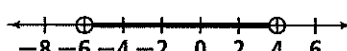
5. $-3 < d < -2$;



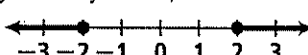
6. $-6 < t < 2$;



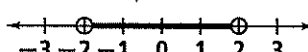
7. $-6 < s < 4$;



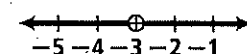
8. $j \geq 2$ or $j \leq -2$;



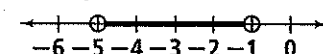
9. $-2 < x < 2$;



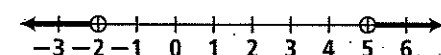
10. $g > -3$ or $g < -3$;



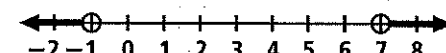
11. $-5 < y < -1$;



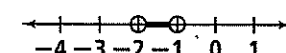
12. $f > 5$ or $f < -2$;



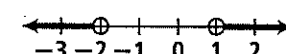
13. $d > 7$ or $d < -1$;



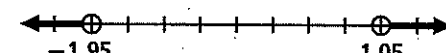
14. $-2 < h < -1$;



15. $a > 1$ or $a < -2$;



16. $z > 1.05$ or $z < -1.95$;

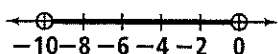


Practice 4-4

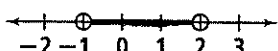
1. $z < 3$ 2. $k > 2$ 3. $y < 3$ 4. $h \geq -1$ 5. $r > 3$
 6. $u < 20$ 7. $g \geq 2$ 8. $h < 5$ 9. $p < 5$ 10. $m \geq 5$
 11. $a > -1$ 12. $t \leq 0$ 13. $x > 6$ 14. $f > 4$
 15. $t > -9$ 16. $c \leq 6$ 17. $t > -6$ 18. $v < 1$
 19. $150 + 35n \leq 850$, where n = number of boxes; at most 20 boxes
 20. $5(6) + 4n \leq 62$, where n = number of tables seating four people; no more than 8 tables
 21. $5 + 1.25n \leq 15$, where n = number of rides; 8 rides
 22. $19.50 + 0.25n \leq 44$, where n = number of miles; 98 mi
 23. $3(200) + 5n \geq 1000$, where n = number of adults; at least 80 adults
 24. $b < 7$ 25. $n < -2$ 26. $d < -0.5$ 27. $t < -2$
 28. $j < -12$ 29. $x \geq 5$ 30. $z > 1$ 31. $b < 6$
 32. $y \geq -8$ 33. $f < 1$ 34. $k < \frac{3}{4}$ 35. $g \geq 5$
 36. $g > -9$ 37. $y < 0$ 38. $t > -5$ 39. $d > 3$
 40. $n < 2$ 41. $d \leq 4$

Practice 4-5

1. $-10 < s < 0$;



2. $-1 < x < 2$;

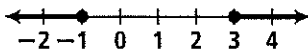


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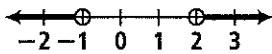
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Chapter 4 Answers (continued)

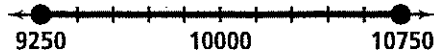
17. $c \geq 3$ or $c \leq -1$;



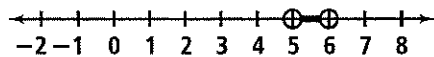
18. $h < -1$ or $h > 2$;



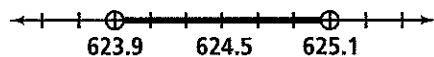
19. $-750 \leq n - 10,000 \leq 750$, where n = number of people; from 9250 to 10,750 people;



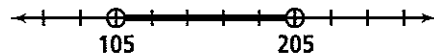
20. $25 < 5n < 30$, where n = number of miles; between 5 and 6 mi;



21. $629.4 < 5.5 + w < 630.6$, where w = weight in grams; more than 623.9 but less than 625.1g;



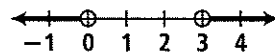
22. $500 < 395 + d < 600$, where d = dollar amount left to sell; between \$105 and \$205;



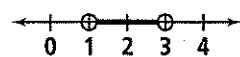
23. $n \geq 1$ or $n \leq 0$;



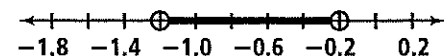
24. $k > 3$ or $k < 0$;



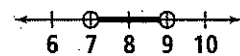
25. $1 < h < 3$;



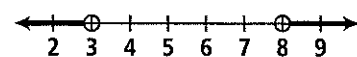
26. $-1.2 < p < -0.2$;



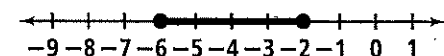
27. $7 < x < 9$;



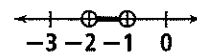
28. $m < 3$ or $m > 8$;



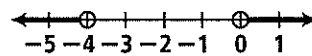
29. $-6 \leq x \leq -2$;



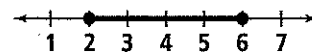
30. $-2 < x < -1$;



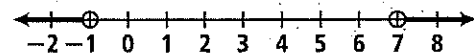
31. $x > 0$ or $x < -4$;



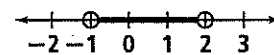
32. $2 \leq s \leq 6$;



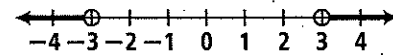
33. $w > 7$ or $w < -1$;



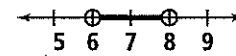
34. $-1 < x < 2$;



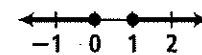
35. $t < -3$ or $t > 3$;



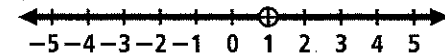
36. $6 < g < 8$;



37. $x \geq 1$ or $x \leq 0$;

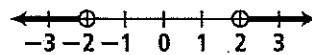


38. $y < 1$ or $y > 1$;

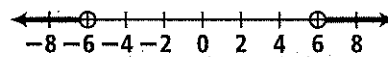


Practice 4-6

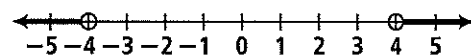
1. $d > 2$ or $d < -2$;



2. $h < -6$ or $h > 6$;



3. $k > 4$ or $k < -4$;



4. $s < -6$ or $s > -2$;

