

Solving Inequalities and Absolute Value Equations

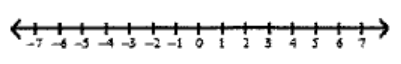
Chapter 3 Practice Assignments

INTERMEDIATE ALGEBRA

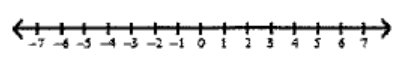
Name: _____ HR: _____

Concept 1(part 1): Draw a graph for each inequality. Draw #6 and #10 also on a coordinate plane. Write #1, #5, and #10 in words, too.

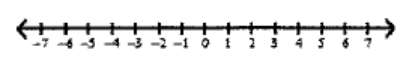
1. $v \leq 2$



2. $x \geq 5$

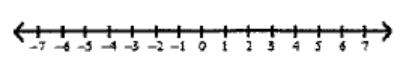


3. $m \geq -5$

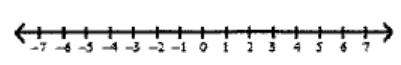


words: _____

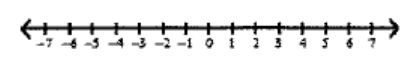
4. $2 < x$



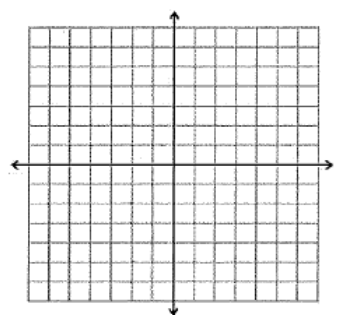
5. $-2 < m$



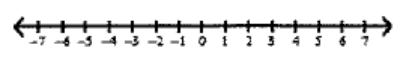
6. $5 \geq x$



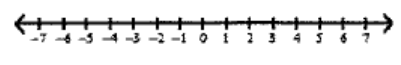
words: _____



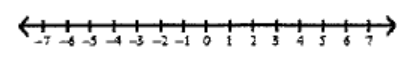
7. $-5 \leq b$



8. $x < 2$

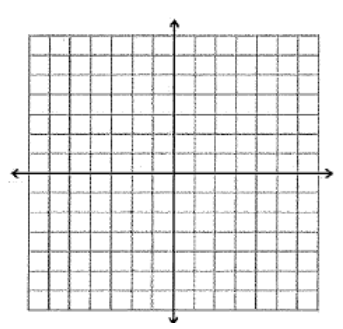


9. $b \leq -2$

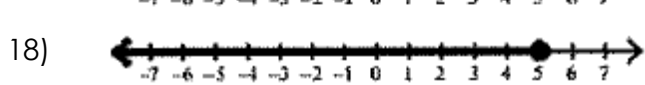
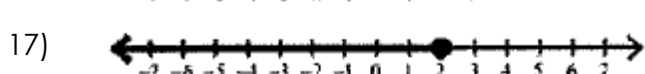
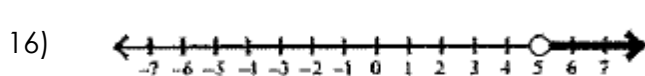
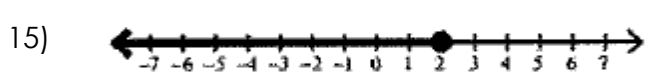
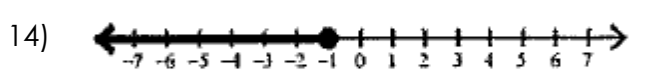
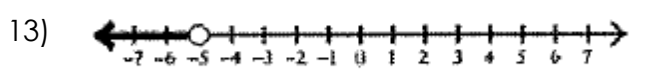
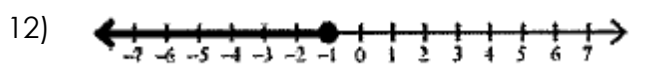
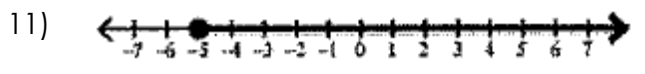


10. $x > 5$

words: _____



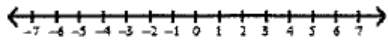
Concept 1(part 2): Write an inequality for each graph.



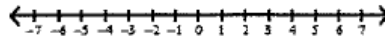
Concept 2: Graph #19-24 on the number line provided.

For #25-30, write an inequality to represent the number line graph given.

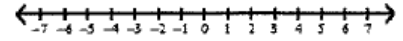
19. $-1 > k$



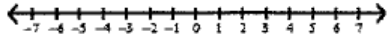
20. $-5 > n$



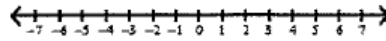
21. $2 \geq k$



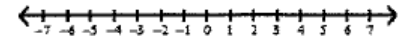
22. $x \geq -5$



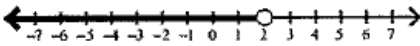
23. $5 \geq x$



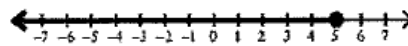
24. $m < -1$



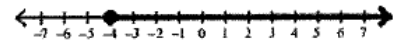
25. _____



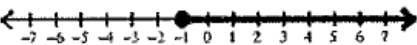
26. _____



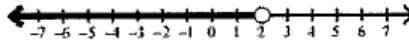
27. _____



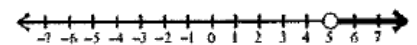
28. _____



29. _____



30. _____



Using the chart at the bottom of the page, check/mark/highlight which inequalities/graphs have the following numbers as solutions: -5, -3, -1, 0, 1, 2, 3, 4, 5

#19 is done for you. Explanation: $-1 > k$ should be re-written as $k < -1$. Then shade everything to the LEFT of -1 but not including -1 .

	#19	#20	#21	#22	#23	#24	#25	#26	#27	#28	#29	#30
-5	YES											
-3	YES											
-1	NO (open circle)											
0	NO											
1	NO											
2	NO											
3	NO											
4	NO											
5	NO											

Concept 3: Solve each inequality and graph its solution. Draw your own number line for each. Write your solution as a sentence (in words).

31. $r - 4 > 8$

32. $m - 8 \geq -25$

33. $15 > 16 + x$

34. $-1 \leq n + 4$

35. $-33 \geq -16 + b$

36. $7 < v - 4$

37. $7 < x + 12$

38. $x - 8 \geq -10$

Concept 4: Solve each inequality and graph its solution. You do not have to write as a sentence.

39. $-36 > -18a$

40. $200 > 20k$

41. $\frac{p}{9} \geq 18$

42. $-323 > 17n$

43. $-18 < \frac{x}{12}$

44. $-16r \geq -96$

45. $-4m \leq -40$

46. $-12 \geq \frac{x}{4}$

Concept 5: Solve each inequality and graph its solution. You do not have to write as a sentence.

47. $-9(-9 + n) < -81$

48. $4 < \frac{b}{6} + 3$

49. $-6 \geq 1 + 3x + 4x$

50. $-6 + 7v - 8 \leq 7$

51. $-8(6 + 5n) \geq 32$

52. $7(-6a + 6) < -42$

53. $54 > -2(k - 7) - 7(k - 7)$

54. $7(x + 6) - 8(1 + 6x) < -7$

Concept 6 (part 1): Solve each equation. Remember that there should be TWO solutions.

55. $|x| = 9$

56. $|n| = 2$

57. $b + 9 = 14$

58. $|v + 3| = 12$

59. $|9 + 2x| = 9$

60. $7|+1x| = 22$

61. $1 + |2a| = 19$

62. $-7 + \left|\frac{k}{4}\right| = -6$

Concept 6 (part 2): Solve each equation. Remember that there should be TWO solutions.

63. $7 + 3\left|\frac{x}{5}\right| = 10$

64. $9\left|\frac{p}{2}\right| - 2 = 25$

65. $\frac{|-7n-10|}{8} = 1$

66. $-9|-3m - 5| = -36$

67. $10|4x - 9| + 4 = 14$

68. $2 - 6|r - 1| = -10$

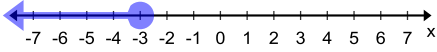
CHAPTER 3 PRACTICE TEST

Concept 1 (part 1). Draw a graph for each inequality and write your solution as a sentence.

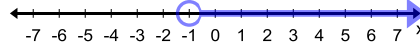
1. $x \geq 4$

Concept 1 (part 2). Write an inequality for each graph.

2.

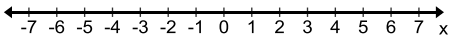


3.

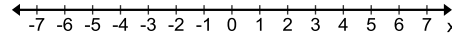


Concept 2. Use the chart to determine which inequalities/graphs have the following numbers as solutions: -5, -3, -1, 0, 1, 2, 3, 4, 5

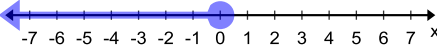
4. $5 > n$



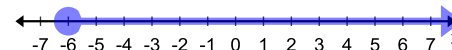
5. $2 < r$



6.



7.



Concepts 3 and 4. Solve each inequality and graph its solution. Draw a number line and write your solution as a sentence.

8. $x + 7 \leq -9$

9. $-168 < -14n$

Concept 5. Solve each inequality and graph its solution. Draw a number line and write your solution as a sentence.

10. $1 > \frac{k}{5} - 2$

11. $2 > 8 - 2p + 8$

12. $-8x - 2x < 0$

13. $40 > 8(5 - 7n)$

14. $5(1 + 8m) + 3(m - 3) > 39$

Concept 6. Solve each equation. (two answers)

15. $|r| = 5$

16. $|x + 10| = 19$

17. $|7n - 1| = 55$

18. $|-10b| - 3 = 97$

19. $10|4v| - 5 = 35$

20. $|10x - 1| - 1 = 70$

21. $|2n - 2| - 5 = 9$

Chapter 1 Concept 8 REVIEW. Evaluate using the values given.

22. $c - (a - c \div 5)$; use $a = 4$ and $c = 5$

Chapter 2b Concept 4 REVIEW.

23. Find two consecutive integers whose sum is 151.