

3.1

Practice - Graphing and Solving Inequalities

Draw a graph for each inequality and give interval notation.

1) $n > -5$

2) $n > 4$

3) $-2 \geq k$

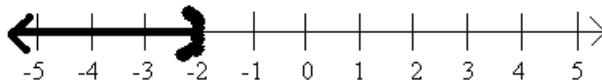
4) $1 \geq k$

5) $5 \geq x$

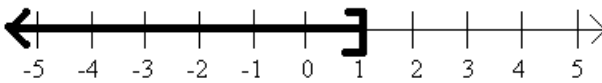
6) $-5 < x$

Write an inequality for each graph.

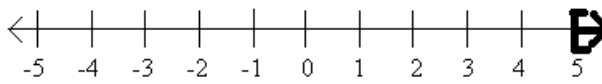
7)



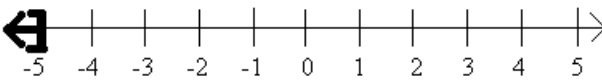
8)



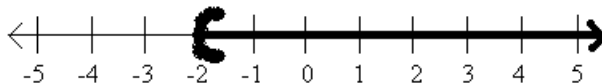
9)



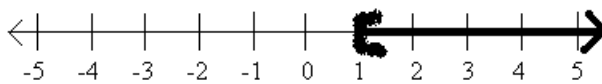
10)



11)



12)



Solve each inequality, graph each solution, and give interval notation.

13) $\frac{x}{11} \geq 10$

14) $-2 \leq \frac{n}{13}$

15) $2 + r < 3$

16) $\frac{m}{5} \leq -\frac{6}{5}$

17) $8 + \frac{n}{3} \geq 6$

18) $11 > 8 + \frac{x}{2}$

19) $2 > \frac{a-2}{5}$

20) $\frac{v-9}{-4} \leq 2$

21) $-47 \geq 8 - 5x$

22) $\frac{6+x}{12} \leq -1$

23) $-2(3+k) < -44$

24) $-7n - 10 \geq 60$

25) $18 < -2(-8+p)$

26) $5 \geq \frac{x}{5} + 1$

27) $24 \geq -6(m-6)$

28) $-8(n-5) \geq 0$

29) $-r - 5(r-6) < -18$

30) $-60 \geq -4(-6x-3)$

31) $24 + 4b < 4(1 + 6b)$

32) $-8(2 - 2n) \geq -16 + n$

33) $-5v - 5 < -5(4v + 1)$

34) $-36 + 6x > -8(x + 2) + 4x$

35) $4 + 2(a + 5) < -2(-a - 4)$

36) $3(n + 3) + 7(8 - 8n) < 5n + 5 + 2$

37) $-(k - 2) > -k - 20$

38) $-(4 - 5p) + 3 \geq -2(8 - 5p)$



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Answers - Graphing and Solving Inequalities

- | | |
|---------------------------------|--|
| 1) $(-5, \infty)$ | 20) $v \geq 1: [1, \infty)$ |
| 2) $(-\infty, -2]$ | 21) $x \geq 11: [11, \infty)$ |
| 3) $(-\infty, 5]$ | 22) $x \leq -18: (-\infty, -18]$ |
| 4) $(-\infty, 1]$ | 23) $x > 19: (19, \infty)$ |
| 5) $(-\infty, 5]$ | 24) $n \leq -10: (-\infty, -10]$ |
| 6) $(-5, \infty)$ | 25) $p < -1: (-\infty, -1)$ |
| 7) $m < -2$ | 26) $x \leq 20: (-\infty, 20]$ |
| 8) $m \leq 1$ | 27) $m \geq 2: [2, \infty)$ |
| 9) $x \geq 5$ | 28) $n \leq 5: (-\infty, 5]$ |
| 10) $a \leq -5$ | 29) $r > 8: (8, \infty)$ |
| 11) $b > -2$ | 30) $x \leq -3: (-\infty, -3]$ |
| 12) $x > 1$ | 31) $b > 1: (1, \infty)$ |
| 13) $x \geq 110: [110, \infty)$ | 32) $n \geq 0: [0, \infty)$ |
| 14) $n \geq -26: [-26, \infty)$ | 33) $v < 0: (-\infty, 0)$ |
| 15) $r < 1: (-\infty, 1)$ | 34) $x > 2: (2, \infty)$ |
| 16) $m \leq -6: (-\infty, -6]$ | 35) No solution: \emptyset |
| 17) $n \geq -6: [-6, \infty)$ | 36) $n > 1: (1, \infty)$ |
| 18) $x < 6: (-\infty, 6)$ | 37) {All real numbers.} : \mathbb{R} |
| 19) $a < 12: (-\infty, 12)$ | 38) $p \leq 3: (-\infty, 3]$ |



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