

Ans. Key

5-4 Solving Compound Inequalities And vs. Or

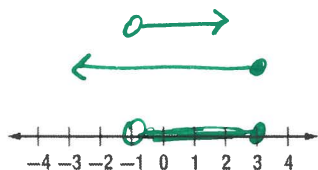
And – both conditions must be met by the graph use the overlapping area

Or – both conditions are graphed

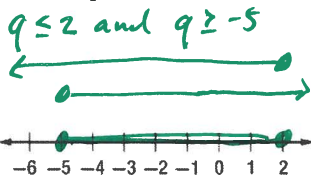
Exercises

Graph the solution set of each compound inequality. Graph both parts then determine what the solution set should look like on the graph. Graph one part above and one part below the graph for help.

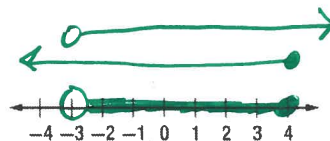
1. $b > -1$ and $b \leq 3$



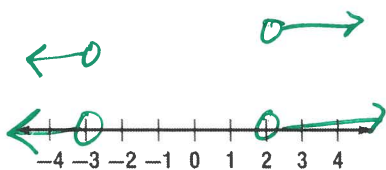
2. $2 \geq q \geq -5$



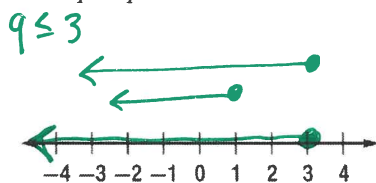
3. $x > -3$ and $x \leq 4$



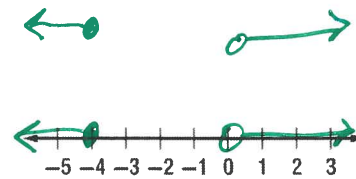
4. $b > 2$ or $b \leq -3$



5. $3 \geq q$ or $q \leq 1$

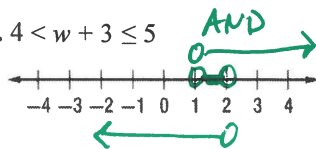


6. $y \leq -4$ or $y > 0$



Solve each compound inequality. Identify as an AND /OR inequality. Then graph the solution set.

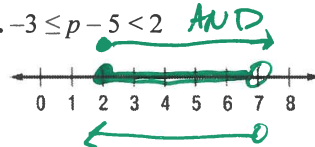
7. $4 < w + 3 \leq 5$



$$4 < w + 3 \leq 5, -3$$

$$\begin{array}{r} -3 & -3 \\ \hline 1 < w \leq 2 \\ w > 1 \text{ and } w \leq 2 \end{array}$$

8. $-3 \leq p - 5 < 2$



$$\begin{array}{r} -3 \leq p - 5 < 2 \\ +5 \quad +5 \quad +5 \\ \hline 2 \leq p < 7 \\ p \geq 2 \text{ and } p < 7 \end{array}$$

9. $3 < 3w$ or $3w \geq 9$ OR

$1 < w$
 $w > 1$

OR

$w \geq 3$

10. $-3p + 1 \leq -11$ or $p < 2$ OR

$-3p \leq -12$
 $p \geq 4$ or $p < 2$

11. $2x + 4 \leq 6$ or $x \geq 2x - 4$ OR

$2x \leq 2$
 $x \leq 1$ or $-1x \geq -4$
 $x \leq 4$

12. $2y + 2 < 12$ or $y - 3 \geq 2y$ OR

$2y < 10$
 $y < 5$ or $-3 \geq y$
 $y \leq -3$

13. $n - 2 > -3$ and $n + 4 < 6$ AND

$n > -1$ and $n < 2$

14. $d - 3 < 6d + 12 < 2d + 32$ AND

$d - 3 < 6d + 12 < 2d + 32$
 -12 -12

$d - 15 < 6d < 2d + 20$

$d - 15 < 6d$ and $6d < 2d + 20$
 $-15 < 5d$ $4d < 20$
 $-3 < d$ and $d < 5$

Write a compound inequality for each graph.

15.

$-3 < x \leq 3$ AND

16.

$-1 \leq x \leq 4$ and

17.

$x < -2$ or $x > 1$ OR

18.

$x < -1$ or $x > 2$