

SOLVING COMPOUND INEQUALITIES

Graph the solution set of each compound inequality. Then, if it's an "and" inequality, rewrite it as a single inequality.

1. $b > 3$ or $b \leq 0$



2. $z \leq 3$ and $z \geq -2$

$-2 \leq z \leq 3$

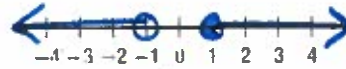


3. $k > 1$ and $k > 5$

$k < 5$



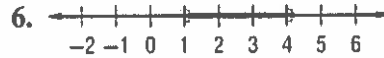
4. $y < -1$ or $y \geq 1$



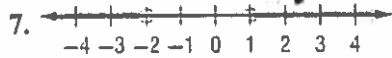
Write a compound inequality for each graph.



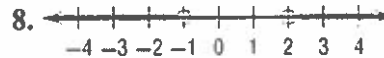
$-3 \leq x \leq 3$



$1 \leq x \leq 4$



$x < -2$ or $x \geq 3$



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

Solve each compound inequality. Show your work. Then, graph the solution set.

9. $m + 3 \geq 5$ and $m + 3 < 7$
 $\begin{array}{r} +3 \quad -3 \\ m + 3 \geq 5 \\ \hline m \geq 2 \end{array}$
 $\begin{array}{r} +3 \quad -3 \\ m + 3 < 7 \\ \hline m < 4 \end{array}$
 $2 \leq m < 4$



10. $y - 5 < -4$ or $y - 5 \geq 1$
 $\begin{array}{r} +5 \quad +5 \\ y - 5 < -4 \\ \hline y < 1 \end{array}$
 $\begin{array}{r} +5 \quad +5 \\ y - 5 \geq 1 \\ \hline y \geq 6 \end{array}$
 $y < 1$ or $y \geq 6$



11. $4 < f + 6$ and $f + 6 < 5$
 $\begin{array}{r} -6 \quad -6 \\ 4 < f + 6 \\ \hline -2 < f \end{array}$
 $\begin{array}{r} -6 \quad -6 \\ f + 6 < 5 \\ \hline f < -1 \end{array}$
 $-2 < f < -1$



12. $w + 3 \leq 0$ or $w + 3 \geq 9$
 $\begin{array}{r} -3 \quad -3 \\ w + 3 \leq 0 \\ \hline w \leq -3 \end{array}$
 $\begin{array}{r} -7 \quad -7 \\ w + 3 \geq 9 \\ \hline w \geq 6 \end{array}$
 $w \leq -3$ or $w \geq 6$

