

Compound Inequalities

In problems 1-3, Use $A = \{1, 2, 3, 4, 5, 6\}$, $B = \{1, 3, 10\}$, and $C = \{4, 5, 7, 11\}$ to find each set.

1. $A \cup B$	2. $A \cap B$
3. $B \cap C$	

In problems 4-5, use the graph of the inequality to find each set.

4. $A = \{x \mid x < 7\}$; $B = \{x \mid x \geq 1\}$ Find $A \cup B$ and $A \cap B$	5. $A = \{x \mid x \geq 5\}$; $B = \{x \mid x < 2\}$ Find $A \cup B$ and $A \cap B$
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In problems 6-11, solve each compound inequality. Graph the solution set.

6. $x - 4 \leq 0$ and $3x > -9$	7. $8x - 1 < 7$ and $-3x > -9$
8. $-2 \leq 4x - 2 < 10$	9. $7 \leq -3x + 4 < 12$
10. $-2 < -5x - 4 \leq 21$	11. $-1 < \frac{5x - 1}{4} \leq 3$

In problems 12-15, solve each compound inequality. Graph the solution set.

12. $x + 7 < 0$ and $x - 6 \geq 0$	13. $7(x - 3) < 5$ or $6(x - 2) > 6$
14. $9x + 3 \leq 21$ or $\frac{1}{5}x - 2 > 3$	15. $8(x - 2) + 4 < 3$ or $-4(x - 1) < 2$