

Homework: Linear Inequalities for One Variable

In Problems 1-4, write each inequality using interval notation. Graph the inequality

1. $-3 \leq x \leq 8$	2. $5 < x \leq 8$
3. $x < -3$	4. $x \geq 9$

In Problems 5-8, write each interval as an inequality involving x . Graph each inequality

5. $[2, \infty)$	6. $(3, 8)$
7. $(-\infty, 5)$	8. $[-8, 7)$

In Problems 9-22, solve each linear inequality. Write the solution using set-builder notation and interval notation. Graph the solution set

9. $x + 7 < 3$	10. $5x \geq 25$
11. $-3x \leq 12$	12. $\frac{2}{3}x < \frac{1}{4}$
13. $-9x - 1 > 17$	14. $7x + 3 \leq 12$
15. $4x - 2 > 2x + 1$	16. $x - 7 \leq 8x + 2$
17. $-5(x - 2) > 3(x + 1)$	18. $8(x - 2) - 3x < 4x - 2(x + 3)$
19. $-(x - 7) + 3 \geq 5(x - 2) + 7$	20. $\frac{x - 5}{6} \leq \frac{1}{9}$
21. $\frac{8x - 2}{8} + 3 < \frac{x + 1}{6}$	22. $\frac{1}{2} - 2x \geq \frac{2}{3}$