

Practice Problems

Solve each of the following inequalities.

1. $-5x - 3 < 7$

2. $-m + 13 \leq -7m + 3$

3. $-2x + 4 \geq 5x - 10$

4. $5p - 7 < 6p + 8$

5. $8x + 1 \geq -7x + 1$

6. $3(w - 4) + 5(w + 8) < 2(w - 1)$

7. $3(2x - 7) - 2(5x + 2) \geq -5x - 30$

8. $\frac{3x - 1}{5} - \frac{7 - x}{3} < 2x + 6$

9. $3(t - 4) - 4(t - 3) > 3(t - 2) + 2(3 - t)$

10. $\frac{2x + 1}{3} - \frac{3 - x}{2} \geq x - 2$

11. $a - 3 > 5(a - 1) - 2$

12. $3y + 4 \leq 3y - 2(-5y + 18)$

13. $2(b + 1) - 5(b - 3) < 2(b - 7) + 1$

14. $3(2x - 1) - 5(2 - x) \leq 4(x - 1) + 5$

Practice Problems - Answers

1. set-builder notation: $x > -2$
interval notation: $(-2, \infty)$
2. set-builder notation: $m \leq -\frac{5}{3}$
interval notation: $\left(-\infty, -\frac{5}{3}\right]$
3. set-builder notation: $x \leq 2$
interval notation: $(-\infty, 2]$
4. set-builder notation: $p > -15$
interval notation: $(-15, \infty)$
5. set-builder notation: $x \geq 0$
interval notation: $[0, \infty)$
6. set-builder notation: $w < -5$
interval notation: $(-\infty, -5)$
7. set-builder notation: $x \geq -5$
interval notation: $[-5, \infty)$
8. set-builder notation: $x > -8$
interval notation: $(-8, \infty)$
9. set-builder notation: $t < 0$
interval notation: $(-\infty, 0)$
10. set-builder notation: $x \geq -5$
interval notation: $[-5, \infty)$
11. set-builder notation: $a < 1$
interval notation: $(-\infty, 1)$
12. set-builder notation: $y \geq 4$
interval notation: $[4, \infty)$
13. set-builder notation: $b > 6$
interval notation: $(6, \infty)$
14. set-builder notation: $x \leq 2$
interval notation: $(-\infty, 2]$