

Solving Linear Equations & Inequalities

A. Solve for the given variable.

1. $4y - 8 = y + 4$
2. $5a + 16 = -2a + 2$
3. $6s + 12 = 5s - 14 - 12s$
4. $8 - 3x = -4x + 28$
5. $11b - 3 = 2b + 7 + 4b$
6. $7r + 16 = r + 28$
7. $4(2x + 6) = 48$
8. $2(x + 5) = x + 15$
9. $4(a - 1) = 5(a - 2)$
10. $4(15 - x) = 5(x - 8) + 1$
11. $8 - 4(x - 1) = 2 + 3(4 - x)$
12. $4(5x - 1) - 3(4x + 7) = 23$
13. $2.3 + 0.2c = -0.9 - (9.4c + 1.6)$
13. $x - (-5x + 15) = 3(x - 5) + 12$
14. $3(b - 2) + 4 = 2(b + 4) - 8$
15. $\frac{r}{4} + \frac{r}{9} = 26$
16. $\frac{1}{3}(a - 1) = 8$
17. $\frac{2(m + 1)}{5} = 1 + \frac{3m}{5}$
18. $\frac{n}{2} + \frac{n}{3} = \frac{n}{5}$
19. $2x - \frac{1}{3}(90 - x) = 12$
20. $\frac{2}{3}(x - 4) = 1 + \frac{x + 5}{3}$
21. $\frac{2(x + 2)}{3} - \frac{3(x - 7)}{7} = 6$
22. $\frac{2c + 4}{5} - \frac{7c - 6}{15} = 2$
23. $\frac{t - 12}{10} + \frac{3t - 6}{2} = \frac{3(2t + 11)}{5}$
24. $\frac{a - 5}{15} + \frac{2a + 5}{9} = \frac{4a + 1}{3} - (a + 1)$

B. Solve the following inequalities.

1. $x + 2 > 5$
2. $2x < 6$
3. $2x - 3 < x + 3$
4. $5 > -x + 2$
5. $4x + x \geq 18 - 4x$
6. $3 - (8x - 13) - (2x + 16) \leq 0$
7. $6(x - 2) < 4(x - 4) - 9$
8. $3(2x - 3) - 7x > 10$
9. $\frac{y - 2}{5} \leq \frac{2y - 3}{2}$
10. $\frac{3}{4}x - 2 \geq \frac{1}{3}x + 3$
11. $\frac{2}{3}(t - 5) > \frac{3}{4}(8 + t)$
12. $6 - \frac{8x - 1}{3} > \frac{2x + 1}{5}$
13. $\frac{3x - 5}{3} + \frac{5x + 3}{6} < \frac{13}{3}$
14. $\frac{x + 1}{2} - \frac{20}{3} \leq \frac{x + 6}{4} - \frac{x + 2}{3}$
15. $\frac{x + 6}{2} - \frac{x + 3}{2} < \frac{x}{2} - \frac{2}{3}$