

Solve the inequality and represent the solution using

- (a) set notation,
- (b) inequality notation, and
- (c) interval notation.

1. $4(2x - 3) - 12x \leq 0$

2. $5(3z - 2) < 5$

3. $2 - 7(1-x) \geq 3(2-x) - 5(x+3)$

4. $x^2 \leq 9$

5. $\frac{7x+5}{8} - \frac{3x+15}{10} \geq 2$

6. $(2x+1)(4x-1) > 5$

7. $\frac{1}{2}x + 3 < \frac{2}{3}$

8. $3(2x+5) - x \leq 4(x-3) + 7$

9. $(3x-2)(3x-4)(x-5) \leq 0$

10. $(x+1) < 3(x+1)(2x-5)$

11. $x^2 + 2x \geq 3$

12. $\frac{5+3x}{2x-7} < \frac{2}{3}$

13. $\frac{x+7}{2x+5} > 5$

14. $\frac{6x}{5-x} \geq 3x$

15. $\frac{2x+5}{4-3x} > \frac{4}{9}$

16. $15x - 3(x+6) \geq 6$

17. $\frac{6x}{5-2x} \leq 5$

18. $3x + 2 > 12 - 2x$

19. $2x^2 > x + 15$

20. $3z - (5-2z) < 3 \leq 13 - 2(2-2z) + z$

21. $\frac{-3}{x-3} - \frac{2}{(2x+4)(x-3)} \geq \frac{-5}{2x+4}$

22. $\frac{-2}{2y-1} + \frac{3}{y+3} > \frac{11}{(2y-1)(y+3)}$

23. $\frac{14x}{5-x} \leq 7x$

24. $81x^4 < 16$

25. $\frac{2x}{7-x} > x$

26. $\frac{3}{8}x + \frac{1}{4} < \frac{1}{4}x + 3$

27. $\frac{2-4z}{3+z} \leq \frac{3}{7}$

28. $\left| \frac{2-3x}{5+x} \right| > 3$

29. $\left| \frac{x+3}{x-4} \right| \leq \frac{3}{8}$

30. $\left| \frac{x+7}{4x+1} \right| \leq \frac{4}{5}$