

1. Resuelve la inecuación:

- | | | | | |
|----------------------------|---------------------------|------------------------------|------------------------------|----------------------------|
| 1. $2(x+1)-3x < 0$ | 2. $x-2(x-3)-8 < 2$ | 3. $3(x-3)+12 \leq 5x$ | 4. $3x+6 > 2(2x+2)$ | 5. $4x+3 \leq 3(x-2)+6$ |
| 6. $2(x+1)-3x+1 < 2x$ | 7. $2(2x+1)-3x-1 \leq 2$ | 8. $3-3x < 7-2(2x+2)$ | 9. $5x-3 > 3(2x-1)+1$ | 10. $7x-6 \geq 2(3x-2)-3$ |
| 11. $3-2x \geq 2(x+1)-3x$ | 12. $3x-2 > 2(3x-2)+6$ | 13. $2-3x < 7-2(2x+3)$ | 14. $3-2(x+2)+7x > 3x$ | 15. $3x-2-3(x+1) \leq x-2$ |
| 16. $3(x+1) \leq 2(x+1)+4$ | 17. $7x-8 \geq 3(3x-2)-x$ | 18. $7x-2 \leq 3(2x+2)-10$ | 19. $3-2x-2(x-2) \geq 6-5x$ | 20. $2(3x+2)-x-8 < 2x-2$ |
| 21. $4x-3-2(x+3) > 3x-8$ | 22. $7x-3(x-3)-13 > 3x-2$ | 23. $3(2x-2)-2x+7 \geq 3x-1$ | 24. $2(3x-1)-2x+2 \geq 5x-3$ | 25. $2(3x+3)-3x-1 < 4x+3$ |

2. Resuelve la inecuación:

- | | | | |
|--|---|---|--|
| 1. $\frac{5}{12} + \frac{x+2}{6} < 1$ | 2. $\frac{19}{24} + \frac{x+3}{12} > 1$ | 3. $x - \frac{7x-2}{12} \leq \frac{x-1}{6}$ | 4. $\frac{3x+16}{20} - 1 \geq \frac{x-1}{4}$ |
| 5. $\frac{11x+3}{16} + \frac{x-1}{4} < x$ | 6. $\frac{12x+3}{16} - \frac{x-2}{2} > 1$ | 7. $\frac{2x+3}{4} - \frac{3x-4}{10} \leq 1$ | 8. $x - \frac{7x+3}{12} \geq \frac{3x-3}{8}$ |
| 9. $\frac{3x+2}{5} - \frac{5-2x}{10} < x$ | 10. $\frac{x+5}{8} + \frac{3x+2}{4} - x > 1$ | 11. $\frac{4x+3}{12} + \frac{x+2}{2} - x \leq 1$ | 12. $\frac{3x-1}{6} + \frac{2(x+1)}{3} \geq x$ |
| 13. $\frac{4x-5}{6} - \frac{1-2x}{4} < x-1$ | 14. $x - \frac{x-2}{6} - \frac{13x-11}{15} > 1$ | 15. $\frac{15x+2}{18} - \frac{1-3x}{3} \leq 2x$ | 16. $2 - \frac{3x+3}{4} \geq \frac{4x+7}{8} - x$ |
| 17. $1 - \frac{5(x+2)}{12} < \frac{3x+1}{4} - x$ | 18. $2x - \frac{3x-3}{2} - \frac{9x-8}{20} > 2$ | 19. $x - \frac{3x-1}{9} - \frac{19x-24}{27} \leq 1$ | 20. $\frac{5x+21}{30} - \frac{x-2}{10} - \frac{x-1}{5} \geq 1$ |

3. Resuelve la inecuación:

- | | | | | |
|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. $-x^2-x-2 < 2x$ | 2. $2-x^2 < 1+3x^2$ | 3. $3x-x^2-1 \leq 3x$ | 4. $x^2+3x-1 \geq 3x$ | 5. $6x-2-x^2 < 3x$ |
| 6. $x^2+x+4 > x+3$ | 7. $3x^2-2x \leq 4x^2$ | 8. $2x-2-x^2 \geq x-2$ | 9. $x-2+3x^2 < 2$ | 10. $x^2+4x-3 > x-3$ |
| 11. $x-x^2+2 \leq 3x+2$ | 12. $x^2-x \geq 2x^2-2x$ | 13. $4-2x^2-x < 1-2x$ | 14. $2x^2+x-1 > 2x+5$ | 15. $1-3x-4x^2 \leq x+2$ |
| 16. $x^2+x+1 \geq 2x^2+x$ | 17. $x-16x^2-3 < x-2$ | 18. $2x-x^2-2 > 2x-1$ | 19. $2x^2-2x+1 \leq 2-x$ | 20. $3+3x^2-x \geq 1-6x$ |
| 21. $x+2x^2-2 < 1-4x$ | 22. $9x-2-x^2 > 3x+8$ | 23. $8x^2+x-5 \leq 3x-2$ | 24. $x-3x^2+3 \geq 2x+3$ | 25. $x^2+x+9 < 2x^2+x$ |

4. Resuelve la inecuación:

- | | | | |
|---|---|--|--|
| 1. $\frac{x^2-4}{6} - \frac{x^2+x}{2} < x$ | 2. $\frac{7x+21}{24} - \frac{x^2-x}{6} - x > 1$ | 3. $\frac{x^2+x}{4} - \frac{x^2-11x+2}{16} \leq x$ | 4. $\frac{2x^2+3x}{2} - \frac{7x^2+14x}{8} > 1$ |
| 5. $\frac{2x-x^2}{10} - \frac{4x^2-5x+4}{20} \geq x$ | 6. $x^2 - \frac{x^2-2x}{2} - \frac{7x^2-4}{8} \geq 1$ | 7. $\frac{x^2+x}{8} - \frac{x-6-10x^2}{16} + x < 0$ | 8. $\frac{x^2+13x+4}{18} + \frac{x^2+2x}{6} \leq 2x$ |
| 9. $\frac{x^2+3x}{2} - \frac{11x^2-3x-2}{16} \geq 2x$ | 10. $\frac{2x^2+3}{3} - \frac{14x^2-8x+15}{27} < x$ | 11. $x^2 - \frac{18x^2-11x+1}{30} > \frac{3x^2+x}{5}$ | 12. $\frac{x^2+2x}{2} - \frac{1-3x-x^2}{6} < x^2+2x$ |
| 13. $\frac{4x^2-9x+1}{10} + \frac{3x^2+x}{4} > x^2-x$ | 14. $x^2 - \frac{19x^2-5x+2}{24} \leq \frac{2x^2+3x}{12}$ | 15. $x^2 - \frac{2x^2-1}{6} - \frac{2x^2+5x-6}{12} \leq 1$ | 16. $x^2 - \frac{3x^2+x}{4} - \frac{2x^2-x-14}{16} \geq 1$ |

5. Resuelve la inecuación:

- | | | | | | | | |
|----------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|
| 1. $\frac{2}{x-3} < 0$ | 2. $\frac{-2}{x+1} < 0$ | 3. $\frac{2}{1-3x} < 0$ | 4. $\frac{-1}{3-2x} < 0$ | 5. $\frac{25}{x+3} > 0$ | 6. $\frac{1}{2-x} > 0$ | 7. $\frac{-1}{x-1} > 0$ | 8. $\frac{-5}{5-x} > 0$ |
| 9. $\frac{2}{2x-1} \leq 0$ | 10. $\frac{-3}{3x+2} \leq 0$ | 11. $\frac{10}{5-x} \leq 0$ | 12. $\frac{-3}{1-x} \leq 0$ | 13. $\frac{1}{x+2} \geq 0$ | 14. $\frac{-3}{2x+3} \geq 0$ | 15. $\frac{5}{2-4x} \geq 0$ | 16. $\frac{-2}{6-2x} \geq 0$ |
| 17. $\frac{x+2}{x-1} < 0$ | 18. $\frac{2x+1}{2-x} < 0$ | 19. $\frac{1-x}{x+1} < 0$ | 20. $\frac{1-2x}{2-x} < 0$ | 21. $\frac{2x+1}{2x-1} > 0$ | 22. $\frac{1+2x}{1-2x} > 0$ | 23. $\frac{3-x}{x+3} > 0$ | 24. $\frac{2-x}{2-3x} > 0$ |

$$25. \frac{x+1}{x-2} \leq 0 \quad 26. \frac{x+5}{3-x} \leq 0 \quad 27. \frac{1-2x}{x+2} \leq 0 \quad 28. \frac{3-x}{2-3x} \leq 0 \quad 29. \frac{2x+1}{2x-1} \geq 0 \quad 30. \frac{2+x}{1-2x} \geq 0 \quad 31. \frac{5-x}{x-5} \geq 0 \quad 32. \frac{6-3x}{2-4x} \geq 0$$

6. Resuelve la inecuación:

$$\begin{array}{llllll} 1. \frac{x}{x-1} < 1 & 2. \frac{2x}{2x+1} > 1 & 3. \frac{-2x}{3-x} \leq 2 & 4. \frac{-3x}{2-x} \geq 3 & 5. \frac{x+1}{2x-1} < \frac{1}{2} & 6. \frac{2x}{3x-2} > \frac{2}{3} \\ 7. \frac{3x-1}{1-2x} \leq -\frac{3}{2} & 8. \frac{2}{1-x} < 2 & 9. \frac{3}{2x-1} \leq 1 & 10. \frac{1}{2x+3} \geq 1 & 11. \frac{2x+1}{x+2} < 1 & 12. \frac{x-2}{2x+3} > 1 \\ 13. \frac{x-2}{2-x} \leq 1 & 14. \frac{2x+1}{2x+1} \leq 2 & 15. \frac{2-x}{x-1} \geq 2 & 16. \frac{2-x}{1-2x} \leq 2 & 17. \frac{2-4x}{2x-1} \leq 2 & 18. \frac{x+2}{x+1} < \frac{x-2}{2x+2} \\ 19. \frac{x}{x-2} \geq \frac{2}{2x-4} & 20. \frac{x+2}{x-1} + \frac{x}{2x-2} \leq 0 & 21. \frac{x+1}{2x+1} - \frac{1}{4x+2} \leq 1 & 22. \frac{1}{x-1} - \frac{1}{2x-2} \geq 1 & 23. \frac{x}{x-2} - \frac{x+1}{2x-4} \geq 0 & 24. \frac{x+1}{x-1} + \frac{2x-1}{2x-2} \geq 1 \end{array}$$

7. Determina los valores de x que hacen que la siguiente raíz sea un número real:

$$\begin{array}{llllll} 1. \sqrt{x-5} & 2. \sqrt{2x-4} & 3. \sqrt{3-x} & 4. \sqrt{3-4x} & 5. \sqrt{x^2-4} & 6. \sqrt{1-x^2} & 7. \sqrt{x^2-x-2} & 8. \sqrt{x^2+x+2} \\ 9. \sqrt{\frac{x-2}{3}} & 10. \sqrt{\frac{1}{2x-1}} & 11. \sqrt{\frac{2}{2-x}} & 12. \sqrt{\frac{-2}{2x+1}} & 13. \sqrt{\frac{x+1}{x+2}} & 14. \sqrt{\frac{1-x}{x-2}} & 15. \sqrt{1-\frac{1}{x-1}} & 16. \sqrt{\frac{x+1}{x-1}-2} \end{array}$$

— Soluciones —

$$\begin{array}{l} 1.1. (2, +\infty) \quad 1.2. (-4, +\infty) \quad 1.3. \left[\frac{3}{2}, +\infty\right) \quad 1.4. (-\infty, 2) \quad 1.5. (-\infty, -3] \quad 1.6. (1, +\infty) \quad 1.7. (-\infty, 1] \quad 1.8. (-\infty, 2) \quad 1.9. (-\infty, -1) \quad 1.10. [-1, +\infty) \quad 1.11. (-\infty, 1] \quad 1.12. (-\infty, 0) \\ 1.13. (-\infty, -1) \quad 1.14. \left(-\infty, \frac{1}{2}\right) \quad 1.15. [-3, +\infty) \quad 1.16. (-\infty, 3] \quad 1.17. (-\infty, -2] \quad 1.18. (-\infty, -2] \quad 1.19. [-1, +\infty) \quad 1.20. \left(-\infty, \frac{2}{3}\right) \quad 1.21. (-\infty, -1) \quad 1.22. (2, +\infty) \quad 1.23. [-2, +\infty) \\ 1.24. (-\infty, 3] \quad 1.25. (2, +\infty) \quad 2.1. \left(-\infty, \frac{3}{2}\right) \quad 2.2. \left(\frac{-1}{2}, +\infty\right) \quad 2.3. \left(-\infty, \frac{-4}{3}\right) \quad 2.4. \left(-\infty, \frac{1}{2}\right) \quad 2.5. (-1, +\infty) \quad 2.6. \left(\frac{-3}{4}, +\infty\right) \quad 2.7. \left(-\infty, \frac{-3}{4}\right) \quad 2.8. [-3, +\infty) \quad 2.9. \left(\frac{-1}{2}, +\infty\right) \quad 2.10. \\ (-\infty, 1) \quad 2.11. \left[\frac{3}{2}, +\infty\right) \quad 2.12. [-3, +\infty) \quad 2.13. \left(-\infty, \frac{1}{2}\right) \quad 2.14. (-\infty, 2) \quad 2.15. \left[\frac{-4}{3}, +\infty\right) \quad 2.16. \left(-\infty, \frac{3}{2}\right) \quad 2.17. \left(\frac{-1}{2}, +\infty\right) \quad 2.18. (2, +\infty) \quad 2.19. [0, +\infty) \quad 2.20. \left(-\infty, \frac{3}{4}\right) \quad 3.1. \\ (-\infty, -2) \cup (-1, +\infty) \quad 3.2. \left(-\infty, \frac{-1}{2}\right) \cup \left(\frac{1}{2}, +\infty\right) \quad 3.3. (-\infty, +\infty) \quad 3.4. (-\infty, -1] \cup [1, +\infty) \quad 3.5. (-\infty, 1) \cup (2, +\infty) \quad 3.6. (-\infty, +\infty) \quad 3.7. (-\infty, -2] \cup [0, +\infty) \quad 3.8. [0, 1] \quad 3.9. \left(\frac{-4}{3}, 1\right) \quad 3.10. \\ (-\infty, -3) \cup (0, +\infty) \quad 3.11. (-\infty, -2] \cup [0, +\infty) \quad 3.12. [0, 1] \quad 3.13. (-\infty, -1) \cup \left(\frac{3}{2}, +\infty\right) \quad 3.14. \left(-\infty, \frac{-3}{2}\right) \cup (2, +\infty) \quad 3.15. (-\infty, +\infty) \quad 3.16. [-1, 1] \quad 3.17. (-\infty, +\infty) \quad 3.18. inc \quad 3.19. \\ \left(-\infty, \frac{-1}{2}\right) \cup (1, +\infty) \quad 3.20. (-\infty, -1] \cup \left[\frac{-2}{3}, +\infty\right) \quad 3.21. \left(-3, \frac{1}{2}\right) \quad 3.22. inc \quad 3.23. \left[\frac{-1}{2}, \frac{3}{4}\right) \quad 3.24. \left[\frac{-1}{3}, 0\right] \quad 3.25. (-\infty, -3) \cup (3, +\infty) \quad 4.1. (-\infty, -4) \cup \left(\frac{-1}{2}, +\infty\right) \quad 4.2. \left(-3, \frac{-1}{4}\right) \quad 4.3. \\ \left[\frac{-2}{3}, 1\right] \quad 4.4. (-\infty, -2) \cup (4, +\infty) \quad 4.5. \left[\frac{-4}{3}, \frac{-1}{2}\right] \quad 4.6. \left[\frac{2}{3}, 2\right] \quad 4.7. \left(\frac{-4}{3}, \frac{-2}{3}\right) \quad 4.8. \left[\frac{1}{4}, 4\right] \quad 4.9. \left[-2, \frac{1}{3}\right] \quad 4.10. \left(\frac{3}{4}, 4\right) \quad 4.11. \left(\frac{1}{3}, \frac{1}{2}\right) \quad 4.12. (-\infty, -1) \cup \left(\frac{-1}{2}, +\infty\right) \quad 4.13. \\ (-\infty, -2) \cup \left(\frac{-1}{3}, +\infty\right) \quad 4.14. [-1, 2] \quad 4.15. \left[\frac{-1}{2}, \frac{4}{3}\right] \quad 4.16. \left(-\infty, \frac{-1}{2}\right) \cup [2, +\infty) \quad 5.1. (-\infty, 3) \quad 5.2. (-1, +\infty) \quad 5.3. \left(\frac{1}{3}, +\infty\right) \quad 5.4. \left(-\infty, \frac{3}{2}\right) \quad 5.5. (-3, +\infty) \quad 5.6. (-\infty, 2) \quad 5.7. (-\infty, 1) \\ 5.8. (5, +\infty) \quad 5.9. \left(-\infty, \frac{1}{2}\right) \quad 5.10. \left(\frac{-2}{3}, +\infty\right) \quad 5.11. (5, +\infty) \quad 5.12. (-\infty, 1) \quad 5.13. (-2, +\infty) \quad 5.14. \left(-\infty, \frac{-3}{2}\right) \quad 5.15. \left(-\infty, \frac{1}{2}\right) \quad 5.16. (3, +\infty) \quad 5.17. (-2, 1) \quad 5.18. \\ \left(-\infty, \frac{-1}{2}\right) \cup (2, +\infty) \quad 5.19. (-\infty, -1) \cup (1, +\infty) \quad 5.20. \left(\frac{1}{2}, 2\right) \quad 5.21. \left(-\infty, \frac{-1}{2}\right) \cup \left(\frac{1}{2}, +\infty\right) \quad 5.22. \left(\frac{-1}{2}, \frac{1}{2}\right) \quad 5.23. (-3, 3) \quad 5.24. \left(-\infty, \frac{2}{3}\right) \cup (2, +\infty) \quad 5.25. [-1, 2) \quad 5.26. (-\infty, -5] \cup (3, +\infty) \\ 5.27. (-\infty, -2) \cup \left[\frac{1}{2}, +\infty\right) \quad 5.28. \left(\frac{2}{3}, 3\right) \quad 5.29. \left(-\infty, \frac{-1}{2}\right) \cup \left(\frac{1}{2}, +\infty\right) \quad 5.30. \left[-2, \frac{1}{2}\right) \quad 5.31. inc \quad 5.32. \left(-\infty, \frac{1}{2}\right) \cup [2, +\infty) \quad 6.1. (-\infty, 1) \quad 6.2. \left(-\infty, \frac{1}{2}\right) \quad 6.3. (-\infty, 3) \quad 6.4. (2, +\infty) \\ 6.5. \left(-\infty, \frac{1}{2}\right) \quad 6.6. \left(\frac{2}{3}, +\infty\right) \quad 6.7. \left(\frac{1}{2}, +\infty\right) \quad 6.8. (-\infty, 0) \cup (1, +\infty) \quad 6.9. \left(-\infty, \frac{1}{2}\right) \cup [2, +\infty) \quad 6.10. \left(\frac{-3}{2}, -1\right) \quad 6.11. (-2, 1) \quad 6.12. \left(-5, \frac{-3}{2}\right) \quad 6.13. (-\infty, 0] \cup (2, +\infty) \quad 6.14. \\ \left(-\infty, \frac{-3}{2}\right) \cup (-1, +\infty) \quad 6.15. \left(1, \frac{4}{3}\right) \quad 6.16. (-\infty, 0] \cup \left(\frac{1}{2}, +\infty\right) \quad 6.17. \left(-\infty, \frac{1}{2}\right) \cup \left(\frac{1}{2}, +\infty\right) \quad 6.18. (-6, -1) \quad 6.19. (-\infty, 1] \cup (2, +\infty) \quad 6.20. \left[\frac{-4}{3}, 1\right) \quad 6.21. \left(-\infty, \frac{-1}{2}\right) \cup \left(\frac{-1}{2}, +\infty\right) \quad 6.22. \\ \left(1, \frac{2}{3}\right) \quad 6.23. (-\infty, 1] \cup (2, +\infty) \quad 6.24. \left(-\infty, \frac{-3}{2}\right) \cup (1, +\infty) \quad 7.1. [5, +\infty) \quad 7.2. [2, +\infty) \quad 7.3. (-\infty, 3] \quad 7.4. \left(-\infty, \frac{4}{3}\right) \quad 7.5. (-\infty, -2] \cup [2, +\infty) \quad 7.6. [-1, 1] \quad 7.7. (-\infty, -1] \cup [2, +\infty) \quad 7.8. \\ (-\infty, +\infty) \quad 7.9. [2, +\infty) \quad 7.10. \left(\frac{1}{2}, +\infty\right) \quad 7.11. (-\infty, 2) \quad 7.12. \left(-\infty, \frac{-1}{2}\right) \quad 7.13. (-\infty, -2) \cup [-1, +\infty) \quad 7.14. [1, 2) \quad 7.15. (-\infty, 1) \cup [2, +\infty) \quad 7.16. (1, 3] \end{array}$$