

1. Resuelve el sistema:

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|------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------|
| 1. $\begin{cases} x < 2 \\ x < 5 \end{cases}$ | 2. $\begin{cases} x \leq 1 \\ x < -2 \end{cases}$ | 3. $\begin{cases} x \geq 3 \\ x > 5 \end{cases}$ | 4. $\begin{cases} x \leq 5 \\ x > -1 \end{cases}$ | 5. $\begin{cases} x > -2 \\ x < 3 \end{cases}$ | 6. $\begin{cases} x < 2 \\ x > 3 \end{cases}$ |
| 7. $\begin{cases} x \leq -2 \\ x < 2 \end{cases}$ | 8. $\begin{cases} x \leq -3 \\ x \leq 0 \end{cases}$ | 9. $\begin{cases} x \geq 2 \\ x < 4 \end{cases}$ | 10. $\begin{cases} x \geq -1 \\ x \geq 3 \end{cases}$ | 11. $\begin{cases} x \leq -2 \\ x \geq -2 \end{cases}$ | 12. $\begin{cases} x \leq -2 \\ x > 1 \end{cases}$ |
| 13. $\begin{cases} x > 2 \\ x > -1 \end{cases}$ | 14. $\begin{cases} x \leq 0 \\ x \geq -4 \end{cases}$ | 15. $\begin{cases} x \geq 2 \\ x > -2 \end{cases}$ | 16. $\begin{cases} x+3 \leq 4 \\ 1-2x > 5 \end{cases}$ | 17. $\begin{cases} 2x+1 < 2 \\ 1-x > -2 \end{cases}$ | 18. $\begin{cases} x-2 < 2 \\ 5-2x \geq 0 \end{cases}$ |
| 19. $\begin{cases} x-2 \leq 2 \\ 2-2x \geq 1 \end{cases}$ | 20. $\begin{cases} 2x-1 > 0 \\ 2-x < 1 \end{cases}$ | 21. $\begin{cases} 2x+1 \geq 0 \\ 2-x < 3 \end{cases}$ | 22. $\begin{cases} 2x-2 \geq 1 \\ 2-x < 0 \end{cases}$ | 23. $\begin{cases} 2x-1 \geq 2 \\ 2-2x \leq 3 \end{cases}$ | 24. $\begin{cases} x+2 > 1 \\ 1-2x > 0 \end{cases}$ |
| 25. $\begin{cases} 2-x \leq 2 \\ 2x-1 < 4 \end{cases}$ | 26. $\begin{cases} x+2 \leq 5 \\ 2x-1 \geq 2 \end{cases}$ | 27. $\begin{cases} 2-x > 2 \\ 3x-2 > 3 \end{cases}$ | 28. $\begin{cases} 1-x \geq 2 \\ 2x+1 > 1 \end{cases}$ | 29. $\begin{cases} 3-x \geq 2 \\ 2x+3 \geq 5 \end{cases}$ | 30. $\begin{cases} 1-2x \geq 1 \\ x+2 > 1-2x \end{cases}$ |
| 31. $\begin{cases} x+2 > 2x-1 \\ 2x+2 < x-3 \end{cases}$ | 32. $\begin{cases} x+3 \geq 2x-1 \\ x+2 < 3-x \end{cases}$ | 33. $\begin{cases} 1-2x \geq x+2 \\ x+1 < 2-x \end{cases}$ | 34. $\begin{cases} x+2 \geq 3+2x \\ 2x-1 \leq x+2 \end{cases}$ | 35. $\begin{cases} 2x-1 \geq x-1 \\ 1-2x \leq x-1 \end{cases}$ | 36. $\begin{cases} 2x+1 > 2-x \\ 1-x < 1+x \end{cases}$ |
| 37. $\begin{cases} x-2 \leq 2x-3 \\ x+2 > 2-x \end{cases}$ | 38. $\begin{cases} 2-x \leq 1+2x \\ x-2 > 1-x \end{cases}$ | 39. $\begin{cases} x+3 > 2-x \\ 2x+3 > 2+3x \end{cases}$ | 40. $\begin{cases} 2x-1 \leq x+2 \\ 1-2x < x \end{cases}$ | 41. $\begin{cases} 2x+4 \geq 2-x \\ 2+x > 1+2x \end{cases}$ | 42. $\begin{cases} x+1 \leq 2x-1 \\ 1-x \geq x-4 \end{cases}$ |
| 43. $\begin{cases} 2-x < 2x+1 \\ 2x-3 > 3x-2 \end{cases}$ | 44. $\begin{cases} 2x-1 \leq x-3 \\ 2-x < 1+2x \end{cases}$ | 45. $\begin{cases} 3x-3 \leq x+2 \\ 3-x \leq x-2 \end{cases}$ | 46. $\begin{cases} 2x+2 < 1-x \\ 2-3x \leq 1-2x \end{cases}$ | 47. $\begin{cases} x-2 < 2x+1 \\ 3-x \leq 5+x \end{cases}$ | 48. $\begin{cases} x-1 < 2x+3 \\ 2-x \leq 5-3x \end{cases}$ |

2. Halla los valores de x que cumplen la siguiente desigualdad con valor absoluto:

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|----------------|-----------------|-------------------|--------------------|-------------------|--------------------|
| 1. $ x-2 < 3$ | 2. $ 2x+3 > 2$ | 3. $ x+4 \leq 5$ | 4. $ 3x-2 \geq 2$ | 5. $ x+4 \leq 1$ | 6. $ 2x+1 \geq 3$ |
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3. Resuelve el sistema:

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|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 1. $\begin{cases} x-1 < 2 \\ x+2 < 1 \\ 2x-2 \leq 2-x \end{cases}$ | 2. $\begin{cases} x-1 > 1 \\ 2x-1 > 1 \\ 1-x \leq 1+x \end{cases}$ | 3. $\begin{cases} x-2 \leq 0 \\ 1-x \geq 1+x \\ 2x+2 < 3 \end{cases}$ | 4. $\begin{cases} x+2 < 3-x \\ 2x-1 < x-1 \\ x+2 \geq 2+3x \end{cases}$ | 5. $\begin{cases} 2-2x > x+3 \\ x > 2x+1 \\ x+2 \leq 1-x \end{cases}$ | 6. $\begin{cases} x+2 < 1 \\ 2x+1 \leq x-2 \\ x < 3 \end{cases}$ |
| 7. $\begin{cases} -x-1 \geq x+2 \\ 3x-1 < x-2 \\ x+2 < 3-x \end{cases}$ | 8. $\begin{cases} 2x+2 < 2-x \\ 2x+2 < 1-x \\ 1-x \geq x+2 \end{cases}$ | 9. $\begin{cases} x-2 > 2x-1 \\ 1-2x \geq 2-x \\ 2x+2 \leq -1 \end{cases}$ | 10. $\begin{cases} 3x-2 \leq 0 \\ x-1 < 1-x \\ 2-3x \geq x-1 \end{cases}$ | 11. $\begin{cases} x+2 < 3x-1 \\ 2-3x < x+1 \\ 2x+2 \geq 3-x \end{cases}$ | 12. $\begin{cases} 2x+1 > x-1 \\ 2-3x < 1-x \\ x \geq 1-2x \end{cases}$ |
| 13. $\begin{cases} 2x+1 \geq -1 \\ x-4 < 2-x \\ x-1 < 2x+2 \end{cases}$ | 14. $\begin{cases} 3x+1 \geq x+2 \\ 1-2x < 2x-1 \\ 2x+1 > 2-x \end{cases}$ | 15. $\begin{cases} x+2 \leq 3x-1 \\ 1-3x < x-2 \\ 2x-3 > 3-2x \end{cases}$ | 16. $\begin{cases} 3x+2 \geq 2x-1 \\ x+2 < 2x-1 \\ 2x-1 \geq x+2 \end{cases}$ | 17. $\begin{cases} x+3 \geq 1-2x \\ x-4 < 5x-1 \\ 3x+7 \geq 3-2x \end{cases}$ | 18. $\begin{cases} 2+3x \leq 5x-1 \\ 4-x < 2x \\ 2x-3 \geq 2-2x \end{cases}$ |
| 19. $\begin{cases} 3-x \geq 1-3x \\ x-3 < 3x-2 \\ 2-x < 4-3x \end{cases}$ | 20. $\begin{cases} 3x+2 \geq x-1 \\ 3x-1 > x-3 \\ x+2 > 3x+3 \end{cases}$ | 21. $\begin{cases} 2x-1 > x+1 \\ 1-2x \leq x-1 \\ 2-x < 5-2x \end{cases}$ | 22. $\begin{cases} 2x-3 \geq 1-x \\ x-2 > 3-3x \\ 1-2x > 3+x \end{cases}$ | 23. $\begin{cases} 2-x \leq x-1 \\ 3x-2 > 2 \\ 1-3x < 5-5x \end{cases}$ | 24. $\begin{cases} 2x+1 > -1 \\ 3-x \geq 1-2x \\ 3-3x > 1-x \end{cases}$ |
| 25. $\begin{cases} 2-3x < x+5 \\ 3x+2 \geq x-1 \\ 2x+3 \leq 2-x \end{cases}$ | 26. $\begin{cases} x-3 \leq 1+3x \\ 2-3x < 3+x \\ 2x+3 \geq 2+3x \end{cases}$ | 27. $\begin{cases} 2x-2 \geq x-1 \\ x+2 < 3x-1 \\ 2x-5 \leq 4-x \end{cases}$ | 28. $\begin{cases} x+3 > 1-2x \\ 2-3x \leq x+4 \\ 2x+3 \leq 2-2x \end{cases}$ | 29. $\begin{cases} x-2 \leq 3x-1 \\ x+4 > 2-x \\ 2-x \geq 2+x \end{cases}$ | 30. $\begin{cases} x+2 \geq 2-x \\ 2x+2 > 1 \\ 2-x \leq 3-2x \end{cases}$ |
| 31. $\begin{cases} x+2 \leq 2x-1 \\ 3x+2 > 3+x \\ x+1 > 1+3x \end{cases}$ | 32. $\begin{cases} 2x+3 \geq -1 \\ x+2 > 2+3x \\ x-3 > 1-2x \end{cases}$ | 33. $\begin{cases} x-3 \geq 1-2x \\ 2x+3 > 2 \\ 1-2x > 3+2x \end{cases}$ | 34. $\begin{cases} 3-x \geq 2-4x \\ 2x-3 < 2-3x \\ x-3 \geq 1+3x \end{cases}$ | 35. $\begin{cases} 2x+2 \leq x-1 \\ x+2 > 3+3x \\ 2x+4 \geq 1-x \end{cases}$ | 36. $\begin{cases} 3x+1 \geq -1 \\ x-2 \leq 2-x \\ 1-2x > 3+x \end{cases}$ |

4. Resuelve el sistema:

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|----------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|
| 1. $\begin{cases} 2x-1 \geq x+1 \\ x^2-4(x-1) < 1 \end{cases}$ | 2. $\begin{cases} 2+x \leq 2+2x \\ x^2+3(x+1) \leq 3 \end{cases}$ | 3. $\begin{cases} 5-2x \geq 1 \\ 4x(x-2)+3 \geq 0 \end{cases}$ | 4. $\begin{cases} 2x-4 > 5-x \\ x(x+2)-2 \geq 2(x+1) \end{cases}$ | 5. $\begin{cases} x+2 > 3-x \\ 2(x+1)(x-1) \leq 5x-4 \end{cases}$ |
|----------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|

5. Indica todos los puntos del plano que cumplen la siguiente desigualdad:

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|------------|----------------|------------|---------------|--------------------|--------------------|
| 1. $y < 2$ | 2. $y \geq -1$ | 3. $x < 2$ | 4. $x \geq 3$ | 5. $-1 < y \leq 3$ | 6. $-2 \leq x < 2$ |
|------------|----------------|------------|---------------|--------------------|--------------------|

7. $y < x+2$ 8. $y \leq 1-2x$ 9. $y > 2-3x$ 10. $y \geq 2x+3$ 11. $x-2y+1 < 0$ 12. $2x+3y-2 \leq 0$
 13. $3x-2y+2 > 0$ 14. $x+2y-3 \geq 0$ 15. $y-2 \geq x(x+4)$ 16. $x(x-2) > y+1$ 17. $x^2+y-1 < 0$ 18. $2x(3-x) \leq 3(y+1)$

6. Resuelve gráficamente el siguiente sistema:

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

7. Resuelve gráficamente el siguiente sistema:

1. $\begin{cases} x^2+y \leq 2 \\ x^2+y \geq 0 \end{cases}$ 2. $\begin{cases} x+2y \leq 0 \\ x^2+y-2 < 0 \end{cases}$ 3. $\begin{cases} y \geq 0 \\ y+2 > (x+1)^2 \end{cases}$ 4. $\begin{cases} x \geq 2(y-2) \\ (x+2)^2 \leq y+2 \end{cases}$ 5. $\begin{cases} x^2-y-2 \geq 0 \\ x(x+2)+y \geq 1 \end{cases}$ 6. $\begin{cases} 2-y \geq 0 \\ y-(1+x)(1-x) \geq 0 \end{cases}$

8. Resuelve gráficamente el siguiente sistema:

1. $\begin{cases} 2-x > 0 \\ y+1 \geq 0 \\ y-x \leq 1 \end{cases}$ 2. $\begin{cases} x \geq 0 \\ y \geq 0 \\ x+y \geq 2 \end{cases}$ 3. $\begin{cases} x \geq 0 \\ y+2 \geq 0 \\ x+y+1 \geq 0 \end{cases}$ 4. $\begin{cases} y+2 > 0 \\ 2x+y \leq 3 \\ x-y+1 \geq 0 \end{cases}$ 5. $\begin{cases} x-1 < 0 \\ x+2 > 0 \\ y+1 \leq 2(x+1) \end{cases}$ 6. $\begin{cases} x < 4 \\ x+y > 2 \\ x-2y+2 \geq 0 \end{cases}$
 7. $\begin{cases} y \geq 0 \\ 2x+y \geq 3 \\ x \geq 2(y-2) \end{cases}$ 8. $\begin{cases} x \geq 2 \\ x+2y \geq 2 \\ x > 2(y-2) \end{cases}$ 9. $\begin{cases} x \geq 4-2y \\ x \geq 2(y-1) \\ y \leq 2(x-2) \end{cases}$ 10. $\begin{cases} x+2y \geq 1 \\ \frac{1}{3}\left(y - \frac{x}{2}\right) \leq \frac{1}{2} \\ \frac{x-1}{2} - \frac{y}{6} \leq \frac{1}{3} \end{cases}$ 11. $\begin{cases} \frac{x+y}{2} > 0 \\ \frac{x}{6} \geq \frac{y}{2} - 1 \\ \frac{y+1}{2} - x+2 > 0 \end{cases}$ 12. $\begin{cases} \frac{x+y}{3} + \frac{1}{2} \leq 0 \\ \frac{x}{3} - y+1 \geq 0 \\ \frac{y-1}{2} - x+2 \geq 0 \end{cases}$

— Soluciones —

- 1.1. $(-\infty, 2)$ 1.2. $(-\infty, -2)$ 1.3. $(5, +\infty)$ 1.4. $(-1, 5]$ 1.5. $(-2, 3)$ 1.6. inc 1.7. $(-\infty, -2]$ 1.8. $(-\infty, -3]$ 1.9. $[2, 4)$ 1.10. $[3, +\infty)$ 1.11. -2 1.12. inc 1.13. $(2, +\infty)$
 1.14. $[-4, 0]$ 1.15. $[2, +\infty)$ 1.16. $(-\infty, -2)$ 1.17. $(-\infty, \frac{1}{2})$ 1.18. $(-\infty, \frac{5}{2})$ 1.19. $(-\infty, \frac{1}{2})$ 1.20. $(1, +\infty)$ 1.21. $[\frac{-1}{2}, +\infty)$ 1.22. $(2, +\infty)$ 1.23. $[\frac{3}{2}, +\infty)$ 1.24. $(-\frac{1}{2}, \frac{1}{2})$
 1.25. $[0, \frac{5}{2})$ 1.26. $[\frac{3}{2}, 3]$ 1.27. inc 1.28. inc 1.29. 1 1.30. $(\frac{-1}{3}, 0]$ 1.31. $(-\infty, -5)$ 1.32. $(-\infty, \frac{1}{2})$ 1.33. $(-\infty, \frac{-1}{3})$ 1.34. $(-\infty, -1]$ 1.35. $[\frac{2}{3}, +\infty)$ 1.36. $(\frac{1}{3}, +\infty)$
 1.37. $[1, +\infty)$ 1.38. $(\frac{3}{2}, +\infty)$ 1.39. $(\frac{-1}{2}, 1)$ 1.40. $(\frac{1}{3}, 3]$ 1.41. $[\frac{-2}{3}, 1)$ 1.42. $[2, \frac{5}{2})$ 1.43. inc 1.44. inc 1.45. $\frac{5}{2}$ 1.46. inc 1.47. $[-1, +\infty)$ 1.48. $(-4, \frac{3}{2})$ 2.1.
 $(-1, 5)$ 2.2. $(-\infty, \frac{-5}{2}) \cup (\frac{-1}{2}, +\infty)$ 2.3. $[-9, 1]$ 2.4. $(-\infty, 0) \cup (\frac{4}{3}, +\infty)$ 2.5. $[-5, -3]$ 2.6. $(-\infty, -2) \cup (1, +\infty)$ 3.1. $(-\infty, -1)$ 3.2. $(2, +\infty)$ 3.3. $(-\infty, 0]$ 3.4. $(-\infty, 0)$ 3.5. $(-\infty, -1)$
 3.6. $(-\infty, -3]$ 3.7. $(-\infty, \frac{-2}{3})$ 3.8. $(-\infty, \frac{-1}{2}]$ 3.9. $(-\infty, \frac{-1}{2})$ 3.10. $(-\infty, \frac{2}{3})$ 3.11. $(\frac{3}{2}, +\infty)$ 3.12. $(\frac{1}{2}, +\infty)$ 3.13. $[-1, 3)$ 3.14. $(\frac{1}{2}, +\infty)$ 3.15. $(\frac{3}{2}, +\infty)$ 3.16. $[3, +\infty)$
 3.17. $[\frac{-4}{5}, +\infty)$ 3.18. $[\frac{1}{2}, +\infty)$ 3.19. $(\frac{-1}{2}, 1)$ 3.20. $(-1, \frac{-1}{2})$ 3.21. $(2, 3)$ 3.22. $[\frac{4}{3}, \frac{2}{3})$ 3.23. $[\frac{3}{2}, 2)$ 3.24. $[-2, 1)$ 3.25. $(\frac{-3}{4}, \frac{-1}{3}]$ 3.26. $(\frac{-1}{4}, 1]$ 3.27. $(\frac{3}{2}, 3]$
 3.28. $[\frac{-1}{2}, \frac{-1}{4}]$ 3.29. $[\frac{-1}{2}, 0]$ 3.30. $[0, 1]$ 3.31. inc 3.32. inc 3.33. inc 3.34. inc 3.35. inc 3.36. inc 4.1. $[2, 3]$ 4.2. 0 4.3. $(-\infty, \frac{1}{2}) \cup [\frac{3}{2}, 2)$ 4.4. $(3, +\infty)$



