

Sistemas de ecuaciones no lineales

Resolver los siguientes sistemas de ecuaciones:

$$1. \begin{cases} x^2 + y^2 = 290 \\ x + y = 24 \end{cases}$$

(13,11); (11,13)

$$2. \begin{cases} x^2 + y^2 = 9 \\ 2x + y = 3 \end{cases}$$

(0,3); (12/5,-9/5)

$$3. \begin{cases} x^2 + y^2 = 13 \\ y + 3 = 3x \end{cases}$$

(2,3); (-1/5,-18/5)

$$4. \begin{cases} x - 2y^2 = 0 \\ y + 5 = 3x \end{cases}$$

(2,1); (25/18,-5/6)

$$5. \begin{cases} x^2 + y^2 = 25 \\ x - \frac{3}{4}y = 0 \end{cases}$$

(3,4); (-3,-4)

$$6. \begin{cases} x^2 + 3xy = 22 \\ x + y = 5 \end{cases}$$

(2,3); (11/2,-1/2)

$$7. \begin{cases} 4x^2 - xy = 2(x + y) \\ y - x = 1 \end{cases}$$

(2,3); (-1/3,2/3)

$$8. \begin{cases} x^2 - xy + y^2 = 7 \\ x + y = 5 \end{cases}$$

(2,3); (3,2)

$$9. \begin{cases} y = 1 + 2x \\ x^2 + y^2 + 6x = 16 \end{cases}$$

(1,3); (-3,-5)

$$10. \begin{cases} x = 3y - 1 \\ \frac{1}{x} - \frac{1}{y} = \frac{-1}{2} \end{cases}$$

(2,1); (1,2/3)

$$11. \begin{cases} xy = 8 \\ x + y = 6 \end{cases}$$

(2,4); (4,2)

$$12. \begin{cases} x + y = 6 \\ xy = 9 \end{cases}$$

(3,3)

$$13. \begin{cases} x^2 - y^2 = 17 \\ x - y = 1 \end{cases}$$

(9,8)

$$14. \begin{cases} x + y = 3 \\ \frac{1}{x} + \frac{1}{y} = \frac{3}{2} \end{cases}$$

(1,2); (2,1)

$$15. \begin{cases} 4xy - 6y = 3 \\ 3x - 8y = 5 \end{cases}$$

(3;1/2); (1/6,-9/16)

$$16. \begin{cases} 3xy - 4y^2 = 0 \\ 3x - 2y = 1 \end{cases}$$

(1/3,0); (2/3,1/3)

$$17. \begin{cases} 2(x+2y)^2 - (2x+y)^2 = -1 \\ x - y = 5 \end{cases}$$

(8/3,-7/3); (22/3,7/3)

$$18. \begin{cases} \frac{x-y}{x+y} + \frac{x+y}{x-y} = \frac{5}{2} \\ x + y = 2 \end{cases}$$

(3,-1); (3/2,1/2)

$$19. \begin{cases} \frac{x^2 - 3x + 4}{y^2 - 2y + 3} = \frac{1}{3} \\ 7x - 2y = 1 \end{cases}$$

(1,3); (-31/37,-127/37)

$$20. \begin{cases} 3 - \frac{2x-1}{x+1} = \frac{y+3}{y+1} \\ 3x+1 = 2x^2 - y^2 \end{cases}$$

(2,1); (-5/14,-4/7)

$$21. \begin{cases} x^2 + y^2 = 61 \\ xy = 30 \end{cases}$$

(6,5); (-6,-5); (5,6); (-5,-6)

$$22. \begin{cases} x^2 + y^2 = 25 \\ xy + 12 = 0 \end{cases}$$

(4,-3); (-4,3); (3,-4); (-3,4)

$$23. \begin{cases} 2x^2 - 5y^2 = 13 \\ xy + 3 = 0 \end{cases}$$

(3,-1); (-3,1)

$$24. \begin{cases} x^2 + xy + y^2 = 19 \\ xy = 6 \end{cases}$$

(2,3); (3,2); (-2,-3); (-3,-2)

$$25. \begin{cases} x^2 + y^2 = 13 \\ x^2 - yx + y^2 = 7 \end{cases}$$

(3,2); (2,3); (-3,-2); (-2,-3)

$$26. \begin{cases} 2x^2 - y^2 = -1 \\ x^2 + 2y^2 = 22 \end{cases}$$

(2,3); (-2,-3); (-2,3); (2,-3)

$$27. \begin{cases} 2x^2 - 3y^2 = -6 \\ 4x^2 - y^2 = 8 \end{cases}$$

(√3,2); (-√3,-2); (√3,-2); (-√3,2)

$$28. \begin{cases} x^2 + y^2 + 9x + 14 = 0 \\ y^2 = 16 + 4x \end{cases}$$

(-3,2); (-3,-2)

$$29. \begin{cases} x^2 - y^2 + 8 = 0 \\ y^2 = 6x \end{cases}$$

(2,2√3); (2,-2√3); (4,2√6); (4,-2√6)

$$30. \begin{cases} x^2 + xy = 77 \\ xy + y^2 = 44 \end{cases}$$

(7,4); (-7,-4)

$$31. \begin{cases} x^2 + 2xy = -8 \\ y^2 + xy = 24 \end{cases}$$

(4,-8); (-4,8)

$$32. \begin{cases} \frac{1}{x} + \frac{1}{y} = \frac{5}{6} \\ xy = 6 \end{cases}$$

(2,3); (3,2)

$$33. \begin{cases} \frac{1}{x^2} + \frac{1}{y^2} = 13 \\ \frac{1}{x} - \frac{1}{y} = 1 \end{cases}$$

(1/3,1/2); (-1/2,-1/3)

$$34. \begin{cases} x + \frac{2}{y} = 1 \\ y + \frac{1}{x} = 6 \end{cases}$$

(1/2,4); (1/3,3)

$$35. \begin{cases} y + \frac{x}{y} = \frac{21}{2} \\ x - \frac{x}{y} = \frac{9}{2} \end{cases}$$

(5,10); (27/2,3/2)

$$36. \begin{cases} x^2 + y^2 = 25 + 2xy \\ x^2 + 2xy + y^2 = 169 \end{cases}$$

(9,4); (-9,-4); (4,9); (-4,-9)

$$37. \begin{cases} \frac{1}{x} + \frac{1}{y} = \frac{5}{6} \\ \frac{1}{x} - \frac{1}{y} = \frac{1}{6} \end{cases}$$

(2,3)

$$38. \begin{cases} \frac{2}{x} + \frac{3}{y} = \frac{17}{12} \\ \frac{1}{x} - \frac{2}{y} = \frac{-1}{6} \end{cases}$$

(3,4)

$$39. \begin{cases} x^2y + xy^2 = 180 \\ \frac{1}{x} + \frac{1}{y} = \frac{9}{20} \end{cases}$$

(4,5); (5,4)

$$40. \begin{cases} \sqrt{x} + \sqrt{y} = 15 \\ x - y = 105 \end{cases}$$

(121,16)

$$41. \begin{cases} x + y = 5\sqrt{y} \\ \sqrt{x} - \sqrt{y} = 1 \end{cases}$$

(4,1)