

Ordena y resuelve la siguiente ecuación no lineal
con dos incógnitas

$$\begin{cases} 2x - 3y = 9 \\ x^2 - y^2 = 119 \end{cases}$$

$$2x - 3y = 9$$

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$$\left(\frac{9+3y}{2}\right)^2 - y^2 = 119$$

$$81 + 54y + 9y^2 - 4y^2 = 476$$

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$$5y^2 + 54y + 81 - 476 = 0$$

$$5y^2 + 54y - 395 = 0$$

$$y_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y_{1,2} = \frac{-54 \pm \sqrt{10816}}{10}$$

$$y_{1,2} = \frac{-54 \pm 104}{10}$$

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$$y_1 = 5$$

$$y_2 = -79$$

$$x = \frac{9+3y}{2}$$

$$x = 12$$

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Respuestas:

$$7) \frac{81+54y+9y^2}{2} - y^2 = 119$$

$$2) 5y^2 + 54y + 81 - 476 = 0$$

$$10) 2x = 9 + 3y$$

$$6) x = \frac{9+3y}{2}$$

$$3) y_1 = \frac{-54 + 104}{10} = \frac{50}{10} = 5$$

$$9) x = \frac{9 + 3 \cdot 5}{2} = 12$$

$$8) y = 5$$

$$5) 5y^2 + 54y - 395 = 0$$

$$4) y_2 = \frac{-54 - 104}{10} = \frac{-158}{10} = -79$$

$$1) y_{1,2} = \frac{-54 \pm \sqrt{(54)^2 - 4 \cdot 5 \cdot (-395)}}{2 \cdot 5}$$