

Solve:

$$\bullet 3(2x-1) - 2(x+5) = -(x-3)$$

$$\bullet \frac{1}{2} - 3 = \frac{1}{x}$$

$$\bullet \frac{1-3x}{4} + \frac{2x+3}{3} = 1$$

$$\bullet 3(x+2) - 4(x-1) < 6$$

A 25% chlorine solution is to be mixed with a 40% chlorine solution to produce 12 gallons of 35% chlorine solution. How many gallons of each solution should be mixed?

Let x be the # of gallons of 25% chlorine solution.
 y be the # of gal. of 40% ch. soln.

$$\left[\begin{array}{l} x+y=12 \\ 0.25x+0.4y=0.35(12) \end{array} \right] \sim \left[\begin{array}{l} x+y=12 \\ 0.25x+0.4y=4.2 \end{array} \right]$$

Then choose a method to solve for x & y .

The width of a rectangle is 2 in less than twice its length.
The perimeter is 20 in, find length & width

Graph & find the slope of $3x + 2y = 7$

Find an eq for the line passing through pt $(2, -3)$ & perpendicular to $2x - 3y = 10$. Express either general (standard) form or slope-int form.

Solve systems:

$$\begin{bmatrix} 4x - 3y = 7 \\ 9x + 2y = 5 \end{bmatrix}, \quad \begin{bmatrix} 4x + 3y = 7 \\ 2x - y = 10 \end{bmatrix}$$

Expand:

$$(x-2)(x^2+5x+6), \quad 5(2x+1)^2$$

Factor completely:

$$5x^2 - 125, \quad 5x^2 - 18x - 8,$$

Simplify:

$$(9x^5y^3)^2, \quad \frac{8x^{1/3}}{2x^{1/2}}, \quad \left(\frac{12xy^2}{8x^5y^{-3}} \right)^{-2}$$

Divide:

$$(5x^2 - x - 4) \div (x - 1)$$

Rationalize the Denominator:

$$\frac{4}{\sqrt{5} + \sqrt{2}}$$

Simplify:

$$\sqrt{18x^6y^3}, \quad 7\sqrt{12} + 10\sqrt{48}$$

Solve:

$$\sqrt{3x+1} = 11$$

Simplify:

$$\frac{x^2 - 25}{x^2 - 2x - 15} \cdot \frac{x^3 + 3x^2}{x}$$

Solve:

$$x^2 + 7x + 5 = 0, \quad 3x^2 + 5x + 2 = 0, \quad \sqrt{x-2} + 2 = x$$

Find 5 solns ...