

Answer on Question #38296 – Math – Algebra

The elimination process for

$$6x - 5y = -4$$

$$x - 5y = 16?$$

Solution:

When solving a set of equations "by elimination," the first thing you look for is coefficients that are the same or that are the negative of each other. In this case, the y coefficients are the same. One is -5, the other is also -5. That means we can subtract the two equations and eliminate the y term.

$$\begin{cases} 6x - 5y = -4 \\ x - 5y = 16 \end{cases}$$

$$6x - 5y - (x - 5y) = -4 - 16$$

$$5x = -20$$

$$x = -4$$

Now, pick one of the equations, substitute the x value, and solve for y.

$$\begin{aligned} 6x - 5y &= -4 \\ 6 \cdot (-4) - 5y &= -4 \\ -24 - 5y &= -4 \\ -5y &= 20 \\ y &= -4 \end{aligned}$$

Answer: the equations are now solved. $(x, y) = (-4, -4)$.