

What Did The Teacher Do with Omar's Cheese Report?

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

$$\begin{array}{r} \frac{3}{2}x - 1 = -x + 4 \\ +x \quad \quad +x \\ \hline \frac{5}{2}x - 1 = 4 \\ +1 \quad +1 \\ \hline \frac{5}{2}x = 5 \end{array}$$

$$\left(\frac{2}{5}\right) \frac{5}{2}x = 5 \left(\frac{2}{5}\right)$$

$$x = 2$$

$$y = \frac{3}{2}(2) - 1$$

$$y = 3 - 1$$

$$y = 2$$

$$(2, 2)$$

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

$$\begin{array}{r} \frac{1}{3}x + 2 = -\frac{4}{3}x - 3 \\ +\frac{4}{3}x \quad +\frac{4}{3}x \\ \hline \frac{5}{3}x + 2 = -3 \\ -2 \quad -2 \\ \hline \frac{5}{3}x = -5 \end{array}$$

$$\left(\frac{3}{5}\right) \frac{5}{3}x = -5 \left(\frac{3}{5}\right)$$

$$x = -3$$

$$y = \frac{1}{3}(-3) + 2$$

$$y = -1 + 2$$

$$y = 1$$

$$(-3, 1)$$

$$3. \begin{cases} y = 2x + 1 \\ -2x + 3y = -9 \end{cases}$$

$$\begin{array}{r} -2x + 3y = -9 \\ +2x \quad \quad +2x \\ \hline 3y = 2x - 9 \\ \frac{3y}{3} = \frac{2x}{3} - \frac{9}{3} \\ y = \frac{2}{3}x - 3 \end{array}$$

$$3 \left[2x + 1 = \frac{2}{3}x - 3 \right]$$

$$\begin{array}{r} 6x + 3 = 2x - 9 \\ -2x \quad \quad -2x \\ \hline 4x + 3 = -9 \\ -3 \quad -3 \\ \hline 4x = -12 \\ \frac{4x}{4} = \frac{-12}{4} \\ x = -3 \end{array}$$

$$y = 2x + 1$$

$$y = 2(-3) + 1$$

$$y = -5$$

$$(-3, -5)$$

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

$$\begin{array}{r} -3x = x - 4 \\ -x \quad -x \\ \hline -4x = -4 \\ \frac{-4x}{-4} = \frac{-4}{-4} \\ x = 1 \end{array}$$

$$\begin{array}{r} 3(1) + y = 0 \\ 3 + y = 0 \\ -3 \quad -3 \\ \hline y = -3 \end{array}$$

$$(1, -3)$$

$$5. \begin{cases} -3x + 4y = 8 \\ x + 2y + 6 = 0 \end{cases}$$

$$\begin{aligned} -3x + 4y &= 8 \\ \frac{1}{4}(4y &= 3x + 8) \\ y &= \frac{3}{4}x + 2 \end{aligned}$$

$$\begin{aligned} x + 2y + 6 &= 0 \\ \frac{1}{2}(2y &= -x - 6) \\ y &= -\frac{1}{2}x - 3 \end{aligned}$$

$$\begin{aligned} \frac{3}{4}x + 2 &= -\frac{1}{2}x - 3 \\ +\frac{1}{2}x & \quad +\frac{1}{2}x \end{aligned}$$

$$\begin{aligned} \frac{5}{4}x + 2 &= -3 \\ -2 & \quad -2 \end{aligned}$$

$$\begin{aligned} \left(\frac{4}{5}\right) \frac{5}{4}x &= -5 \left(\frac{4}{5}\right) \\ x &= -4 \end{aligned}$$

$$-3x + 4y = 8$$

$$-3(-4) + 4y = 8$$

$$\begin{aligned} 12 + 4y &= 8 \\ -12 & \quad -12 \end{aligned}$$

$$\begin{aligned} 4y &= -4 \\ \frac{4}{4} & \quad \uparrow \end{aligned}$$

$$y = -1$$

$$(-4, -1)$$

$$6. \begin{cases} 7x - 5y = 20 \\ -8x - 3y = 12 \end{cases}$$

$$\begin{aligned} 7x - 5y &= 20 \\ -7x & \quad -7x \\ \hline -5y &= -7x + 20 \\ -5 & \quad -5 \quad -5 \end{aligned}$$

$$y = \frac{7}{5}x - 4$$

$$\begin{aligned} -8x - 3y &= 12 \\ +8x & \quad +8x \\ \hline -3y &= 8x + 12 \\ -3 & \quad -3 \quad -3 \end{aligned}$$

$$y = -\frac{8}{3}x - 4$$

$$\frac{7}{5}x - 4 = -\frac{8}{3}x - 4$$

$$\begin{aligned} +4 & \quad +4 \\ \hline \frac{7}{5}x &= -\frac{8}{3}x \\ +\frac{8}{3}x & \quad +\frac{8}{3}x \end{aligned}$$

$$\frac{15}{15} \left(\frac{61}{15}x = 0 \right)$$

$$x = 0$$

$$-8x - 3y = 12$$

$$-8(0) - 3y = 12$$

$$\begin{aligned} -3y &= 12 \\ -3 & \quad -3 \end{aligned}$$

$$y = -4$$

$$(0, -4)$$

$$7. \begin{cases} -x - 4y = 12 \\ 20x + 80y = 0 \end{cases}$$

$$\begin{array}{r} -1(-x - 4y = 12) \\ x + 4y = -12 \\ -4y \quad -4y \\ \hline x = -4y - 12 \end{array}$$

$$\begin{array}{r} 20x + 80y = 0 \\ -80y - 80y \\ \hline 20x = -80y \\ 20 \quad 20 \\ \hline x = -4y \end{array}$$

$$\begin{array}{r} -4y - 12 = -4y \\ +4y \quad +4y \\ \hline -12 = 0 \end{array}$$

No Solution

$$8. \begin{cases} 30x + 50y - 100 = 0 \\ 3x - 15y - 30 = 0 \end{cases}$$

$$\begin{array}{r} \frac{1}{10} [30x + 50y - 100 = 0] \\ 3x + 5y - 10 = 0 \\ -5y \quad -5y \\ \hline 3x - 10 = -5y \\ +10 \quad +10 \\ \hline 3x = -5y + 10 \end{array}$$

$$\begin{array}{r} 3x - 15y - 30 = 0 \\ +15y \quad +15y \\ \hline 3x - 30 = 15y \\ +30 \quad +30 \\ \hline 3x = 15y + 30 \end{array}$$

$$\begin{array}{r} -5y + 10 = 15y + 30 \\ +5y \quad +5y \\ \hline 10 = 20y + 30 \\ -30 \quad -30 \\ \hline -20 = 20y \\ 20 \quad 20 \\ \hline -1 = y \end{array}$$

$$\begin{array}{r} 30x + 50y - 100 = 0 \\ 30x + 50(-1) - 100 = 0 \\ 30x - 150 = 0 \\ +150 \quad +150 \\ \hline 30x = 150 \\ 30 \quad 30 \\ \hline x = 5 \end{array}$$

(5, -1)