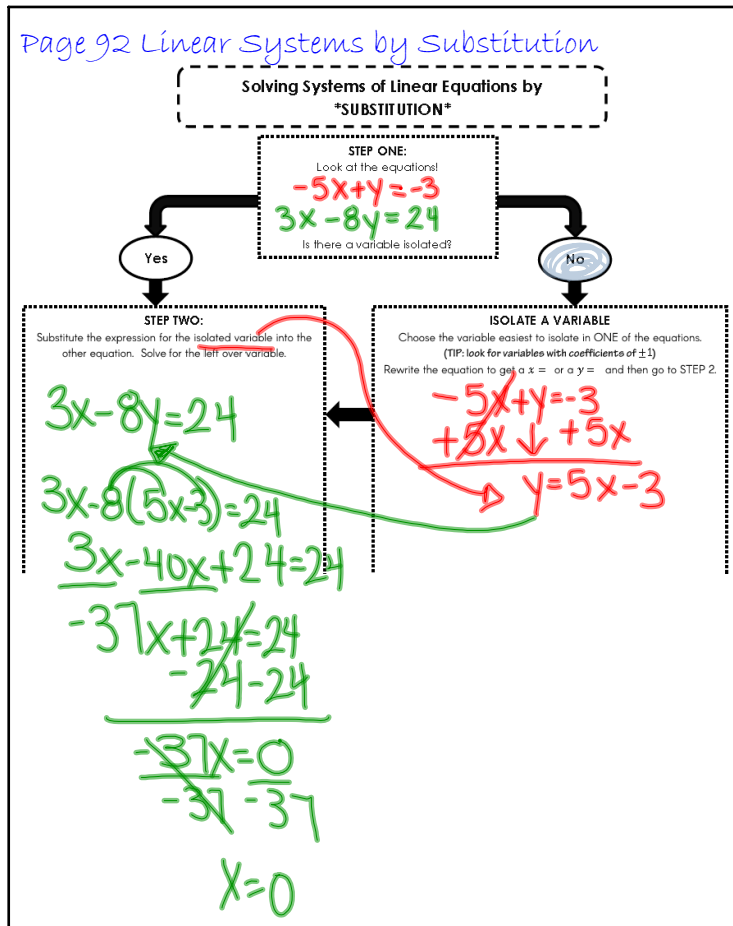
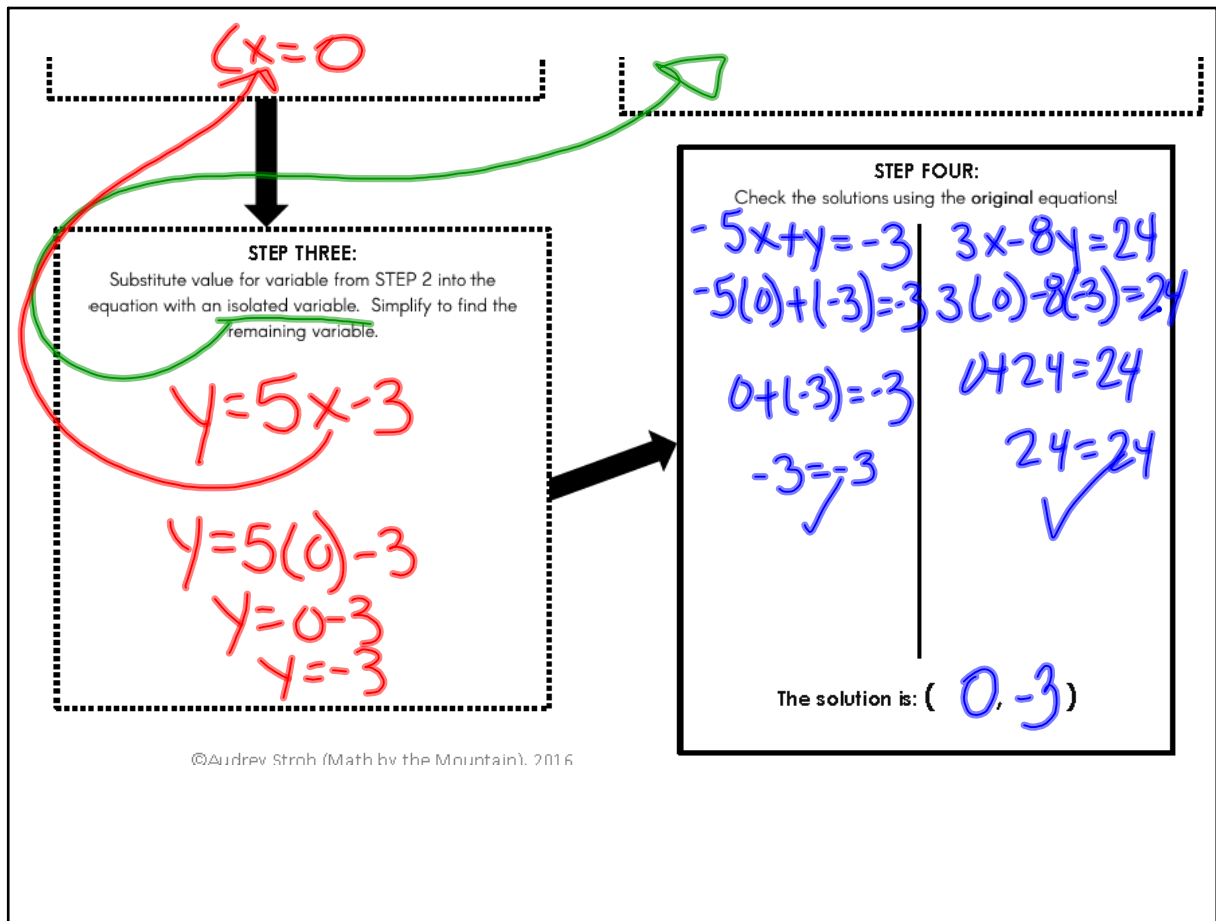


Page 92 Linear Systems by Substitution



Jan 12-9:53 AM



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Jan 12-9:54 AM

Example 1 (page 93)

Solve by substitution

$$y = 3x - 7$$

$$5x - 2y = 8$$

$$5x - 2(3x - 7) = 8$$

$$\underline{5x - 6x + 14 = 8}$$

$$-x + 14 = 8$$

$$\begin{array}{r} -x + 14 = 8 \\ -14 \quad -14 \\ \hline -x = -6 \\ \frac{-1}{-1} \quad \frac{-1}{-1} \\ \hline x = 6 \end{array}$$

$$y = 3(6) - 7$$

$$y = 18 - 7$$

$$y = 11$$

$(6, 11)$

Jan 12-10:14 AM

Example 2 (page 93)

Solve by Substitution

$$3x + 2y = -1$$

$$x - y = 3$$

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

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

$$\underline{3x + 2x - 6 = -1}$$

$$5x - 6 = -1$$

$$\begin{array}{r} 5x - 6 = -1 \\ +6 \quad +6 \\ \hline 5x = 5 \\ \frac{5}{5} \quad \frac{5}{5} \\ \hline x = 1 \end{array}$$

$$y = 1 - 3$$

$$y = -2$$

$(1, -2)$

Jan 12-10:19 AM

Example 3 (page 93)

Solve by substitution

$$x = 9 - 2y$$

$$x + 2y = 13$$

$$9 - 2y + 2y = 13$$

$$9 + 0 = 13$$

$$9 = 13 \quad \times$$

No Solution

Jan 12-10:28 AM

Example 4 (page 93)

Solve by substitution

$$y = 4x - 4$$

$$8x - 2y = 8$$

$$8x - 2(4x - 4) = 8$$

$$8x - 8x + 8 = 8$$

$$0 + 8 = 8$$

$$8 = 8 \quad \checkmark$$

all real #'s

Jan 12-10:31 AM

P. 382 (pdf 408)
13-24
all

Jan 12-10:35 AM

Dec 1-9:44 AM