Pre-Calculus 10 Enriched Systems of Linear Equations

Lesson 3 Solving Systems Using Elimination

Steps

- 1. Arrange the equations with like terms in columns.
- 2. Use multiplication/division to make the coefficients of x or y the same value.
- 3. Add/subtract the equations to eliminate one variable and solve for the remaining variable.
- 4. Substitute the value obtained in Step 3 into either of the original equations and solve for the other variable.
- 5. Check the solution in each of the original equations. (optional)

Example 1 Solve, algebraically. $x + 2y = 10^{-1}$ $-2x + 3y = 15^{\circ}$ Mult \bigcirc by ∂ $\partial x + 4y = 20$ -2x + 3y = 157y= 35 y = 5 sub y: 5 into @ x+ 2(5) = 10 X : 0

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Example 2
Solve, algebraically.

$$2y + 4x = 1$$

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

Sub
$$into D$$

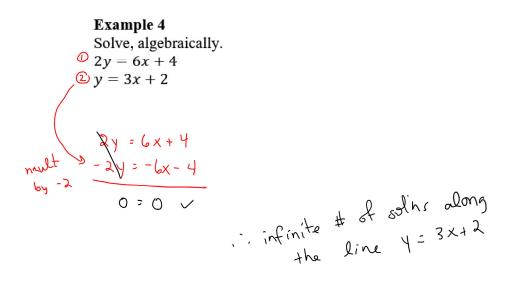
 $ay + 4(-\frac{1}{2}) = 1$
 $ay - a = 1$
 $ay = \frac{3}{2}$
 $y = \frac{3}{2}$

Example 3
Solve, algebraically.

$$y = 2.5x - 3$$

 $2y = 5x + 4$
mult
 $1 - 2 - 3y = -5x + 6$
 $+ (2y = 5x + 4)$
add $0 \neq 10$
No sol n

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Pg. 295 # 20, c, f, h, j, k, l, m, r, t