

## Watch. Practice. Understand. | Lesson 244

The Unknown Steps of Solving Special Linear Systems with Multi Variables Pre Calculus ...

Watch the matching video: <https://www.youtube.com/watch?v=svz77bHKwSk>

Practice focus: Row reduction and multivariable systems

Original extra practice matched to the listed lesson topic.

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Show your reasoning and check units.

**01** Solve  $x + y = 5$  and  $2x - y = 1$  using elimination.

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**02** Interpret the augmented row  $[0,0,0|4]$ .

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**03** Interpret RREF  $[[1,0,2|3],[0,1,-1|4]]$  in variables  $x,y,z$ .

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**04** Solve  $x + y + z = 6$ ,  $x - y = 0$ , and  $z = 2$ .

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## Worked answers | Lesson 244

The Unknown Steps of Solving Special Linear Systems with Multi Variables Pre Calculus ...

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Practice focus: Row reduction and multivariable systems

Original extra practice matched to the listed lesson topic.

**01** Solve  $x + y = 5$  and  $2x - y = 1$  using elimination.

Add rows:  $3x = 6$ , so  $x = 2$ ;  $y = 3$ . Augmented RREF is  $[[1,0,2],[0,1,3]]$ .

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**02** Interpret the augmented row  $[0,0,0|4]$ .

It represents  $0 = 4$ , a contradiction; the system has no solution.

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**03** Interpret RREF  $[[1,0,2|3],[0,1,-1|4]]$  in variables  $x,y,z$ .

Let  $z = t$ . Then  $x = 3 - 2t$ ,  $y = 4 + t$ . Infinitely many solutions.

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**04** Solve  $x + y + z = 6$ ,  $x - y = 0$ , and  $z = 2$ .

$z = 2$  and  $x = y$ . Then  $2x + 2 = 6$  gives  $x = y = 2$ .