

The Heart and Soul of Echelon and Reduce Row Echelon Form Pre Calculus 9.4

Lesson 245 | Precalculus | Row reduction and multivariable systems

https://www.youtube.com/watch?v=nvC31_xjBaE

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Use row reduction to solve $3x+7y=26$, $x+4y=12$.

02

Use row reduction to solve $2x+14y=110$, $x+12y=90$.

03

Use row reduction to solve $4x+8y=84$, $x+6y=49$.

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04

Use row reduction to solve $11x+7y=64$, $x+9y=56$.

05

Use row reduction to solve $5x+11y=42$, $x+14y=32$.

06

Use row reduction to solve $11x+4y=101$, $x+10y=67$.

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01 Use row reduction to solve $3x+7y=26$, $x+4y=12$.

Start with rows $[1,4|12]$ and $[3,7|26]$. $R_2 \leftarrow R_2 - 3R_1$ gives $[0,-5|-10]$. $y=2$; back-substitute to obtain $x=4$. RREF $[1,0|4];[0,1|2]$.

02 Use row reduction to solve $2x+14y=110$, $x+12y=90$.

Start with rows $[1,12|90]$ and $[2,14|110]$. $R_2 \leftarrow R_2 - 2R_1$ gives $[0,-10|-70]$. $y=7$; back-substitute to obtain $x=6$. RREF $[1,0|6];[0,1|7]$.

03 Use row reduction to solve $4x+8y=84$, $x+6y=49$.

Start with rows $[1,6|49]$ and $[4,8|84]$. $R_2 \leftarrow R_2 - 4R_1$ gives $[0,-16|-112]$. $y=7$; back-substitute to obtain $x=7$. RREF $[1,0|7];[0,1|7]$.

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04

Use row reduction to solve $11x+7y=64$, $x+9y=56$.

Start with rows $[1,9|56]$ and $[11,7|64]$. $R_2 \leftarrow R_2 - 11R_1$ gives $[0,-92|-552]$. $y=6$; back-substitute to obtain $x=2$. RREF $[1,0|2];[0,1|6]$.

05

Use row reduction to solve $5x+11y=42$, $x+14y=32$.

Start with rows $[1,14|32]$ and $[5,11|42]$. $R_2 \leftarrow R_2 - 5R_1$ gives $[0,-59|-118]$. $y=2$; back-substitute to obtain $x=4$. RREF $[1,0|4];[0,1|2]$.

06

Use row reduction to solve $11x+4y=101$, $x+10y=67$.

Start with rows $[1,10|67]$ and $[11,4|101]$. $R_2 \leftarrow R_2 - 11R_1$ gives $[0,-106|-636]$. $y=6$; back-substitute to obtain $x=7$. RREF $[1,0|7];[0,1|6]$.