

p.523 #56

Solve: $2x - y + 3z = 24$
 $2y - z = 14$
 $7x - 5y = 6$

$$\begin{bmatrix} 2 & -1 & 3 & 24 & 7 \\ 0 & 2 & -1 & 14 & -2 \\ 7 & -5 & 0 & 6 & -2 \end{bmatrix}$$

$$\begin{bmatrix} 2 & -1 & 3 & 24 & 7 \\ 0 & 2 & -1 & 14 & -2 \\ 0 & -3 & -3 & -12 & -15 \end{bmatrix}$$

$$\begin{bmatrix} 2 & -1 & 3 & 24 & 7 \\ 0 & 2 & -1 & 14 & -2 \\ 0 & 0 & 0 & 0 & -9 \end{bmatrix}$$

$(2, 10, 6)$

Mar 10-7:53 AM

Solve: $2x - y + 3z = 24$
 $2y - z = 14$
 $7x - 5y = 6$

$\text{rref}([A])$

$$\begin{bmatrix} 1 & 0 & 0 & 8 & 1 \\ 0 & 1 & 0 & 10 & -1 \\ 0 & 0 & 1 & 6 & 1 \end{bmatrix}$$

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7-4 cont. Finding Equations through Points

Ex 1 Find the equation of the line through:
 $(8, 3)$ and $(3, -7)$

$2x - 13 = y$

$$y = mx + b$$

$$3 = 8m + b$$

$$-7 = 3m + b$$

$$\begin{bmatrix} 8 & 1 & 3 \\ 3 & 1 & -7 \end{bmatrix} \Rightarrow \begin{bmatrix} 1 & 0 & 2 \\ 0 & 1 & -13 \end{bmatrix}$$

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Ex 2 Find the equation of the parabola through:
 $(2, 20)$ $(0, -2)$ $(-1, -4)$

$Ax^2 + Bx + C = y$

$$4A + 2B + C = 20$$

$$0A + 0B + C = -2$$

$$A + B(-1) + C = -4$$

$$3x^2 + 5x - 2 = y$$

$$\begin{bmatrix} 4 & 2 & 1 & 20 \\ 0 & 0 & 1 & -2 \\ 1 & -1 & 1 & -4 \end{bmatrix}$$

Feb 27-11:00 AM

Ex 3 Find the equation of the parabola through:
 $(1, -4)$ $(3, -2)$ $(0, 1)$

$ax^2 + bx + c = y$

$$1a + 1b + c = -4$$

$$9a + 3b + c = -2$$

$$0a + 0b + c = 1$$

$$2x^2 - 7x + 1 = y$$

$a = 2$
 $b = -7$
 $c = 1$

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Homework
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