Draw an example of a matrix

$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

Oct 28-9:10 AM

5.6 Gauss-Jordan Elimination

$4x-16y=-4$
$-4x+21y=-11$

$$\begin{array}{c} \begin{array}{ccc} x & y & \# \end{array} \\ \left[\begin{array}{cc|c} 4 & -16 & -4 \\ -4 & 21 & -11 \end{array}\right] \end{array} \quad \boxed{\tfrac{1}{4}}\cdot R_1 \to R_1 \left[\begin{array}{cc|c} 1 & -4 & -1 \\ -4 & 21 & -11 \end{array}\right]$$

$$\left[\begin{array}{cc|c} 1 & -4 & -1 \\ -4 & 21 & -11 \end{array}\right] \xrightarrow{\boxed{4}\cdot R_1+R_2 \to R_2} \left[\begin{array}{cc|c} 1 & -4 & -1 \\ 0 & 5 & -15 \end{array}\right]$$

$$\left[\begin{array}{cc|c} 1 & -4 & -1 \\ 0 & 5 & -15 \end{array}\right] \quad \boxed{\tfrac{1}{5}}\cdot R_2 \to R_2 \left[\begin{array}{cc|c} 1 & -4 & -1 \\ 0 & 1 & -3 \end{array}\right]$$

$$\left[\begin{array}{cc|c} 1 & -4 & -1 \\ 0 & 1 & -3 \end{array}\right] \quad \boxed{4}\cdot R_2+R_1 \to R_1 \begin{array}{c} \begin{array}{ccc} x & y & \# \end{array} \\ \left[\begin{array}{cc|c} 1 & 0 & \boxed{-13} \\ 0 & 1 & \boxed{-3} \end{array}\right] \end{array}$$

$$\begin{array}{c} \begin{array}{ccc} x & y & z \end{array} \\ \left[\begin{array}{ccc|c} 1 & 0 & 0 & - \\ 0 & 1 & 0 & - \\ 0 & 0 & 1 & - \end{array}\right] \end{array} \qquad x=-13 \quad y=-3$$

Oct 28-9:18 AM

2x2 Matrix

$-5x+10y=-50$
$2x-2y=17$

(A) $\begin{bmatrix} -5 & 10 & -50 \\ 2 & -2 & 17 \end{bmatrix}$

(B) $\boxed{-\tfrac{1}{5}}\cdot R_1 \to R_1$

$$\begin{bmatrix} 1 & -2 & 10 \\ 2 & -2 & 17 \end{bmatrix}$$

$\boxed{-2}\cdot R_1+R_2 \to R_2$

$$\begin{bmatrix} 1 & -2 & 10 \\ 0 & 2 & -3 \end{bmatrix}$$

$\boxed{\tfrac{1}{2}}\cdot R_2 \to R_2$

$$\begin{bmatrix} 1 & -2 & 10 \\ 0 & 1 & -\tfrac{3}{2} \end{bmatrix}$$

$\boxed{2}\cdot R_2+R_1 \to R_1$

$$\begin{bmatrix} 1 & 0 & 7 \\ 0 & 1 & -\tfrac{3}{2} \end{bmatrix}$$

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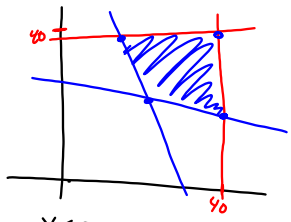

$6x+18y \geq 420$
$18x+9y \geq 540$

$y \leq 38 \quad x \geq 0$
$x \leq 40 \quad y \geq 0$

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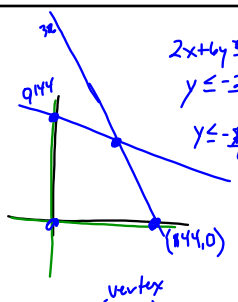
grade A x
grade B y

Max

$2x+6y \leq 864$
$-2(7x+3y \leq 1008)$

$2x+6y \leq 864$
$-14x-6y \leq -2016$

$\frac{-12x}{-12} \leq \frac{-1152}{-12}$ $\quad x \geq 96$



$2x+6y \leq 864$
$y \leq -\frac{2x}{6}+\frac{864}{6}$
$y \leq -\frac{x}{6}+144$

vertex
(144,0)
(0,144) Max
(0,0)
(96,112)

Oct 28-9:48 AM