

$$\textcircled{1} \begin{bmatrix} x & 0 \\ 1 & 2 \end{bmatrix} \begin{bmatrix} 4 & -7 \\ 2 & 5 \end{bmatrix} = \begin{bmatrix} -32 & 56 \\ 8 & y \end{bmatrix}$$

$$4x + 0 = -32$$

$$x = -8$$

$$-7 + 10 = y$$

$$y = 3$$

$$\textcircled{2} \begin{bmatrix} 5 \\ 3 \end{bmatrix} \begin{bmatrix} x & -5 \end{bmatrix} = \begin{bmatrix} 30 & -25 \\ 18 & y \end{bmatrix}$$

$$5x = 30$$

$$x = 6$$

$$-15 = y$$

$$\textcircled{3} 3 \times 2 \text{ or } 2 \times 4$$

$$\begin{bmatrix} -24 & -59 & 10 & 4 \\ -48 & -37 & 32 & -24 \\ 88 & 99 & -66 & 44 \end{bmatrix}$$

$$\textcircled{4} \begin{bmatrix} 3 & 4 \\ -34 & -27 \end{bmatrix}$$

$$\textcircled{5} \begin{matrix} S & B & U \\ 55 & 63 & 5 \end{matrix} \begin{matrix} M & W \\ 8 & 5 \\ 22 & 15 \\ 17 & 16 \end{matrix} \begin{matrix} 1 \times 3 \\ 3 \times 2 \end{matrix}$$

$$\textcircled{A} \begin{matrix} S & B & U \\ 55 & 63 & 5 \end{matrix} \begin{matrix} W \\ 5 \\ 15 \\ 16 \end{matrix} \begin{matrix} 1 \times 3 \\ 3 \times 1 \end{matrix}$$

$$\textcircled{B} \begin{matrix} S & B & U \\ 55 & 63 & 5 \end{matrix} \begin{matrix} 5 \\ 15 \\ 16 \end{matrix} \begin{matrix} 1 \times 3 \\ 3 \times 1 \end{matrix}$$

need a 1×1 so:

$$BA = 925$$

$$\text{same for men} = 1167$$

$$\textcircled{6} 4 \times 1 \text{ and a } 3 \times 4$$

$$\text{must do } BA =$$

$$\begin{bmatrix} 208 & T \\ 204 & R \\ 198 & F \end{bmatrix}$$

$$\textcircled{7} -16 + (115) = -1$$

$$-\frac{1}{1} \begin{bmatrix} 4 & -3 \\ 5 & -4 \end{bmatrix} = \begin{bmatrix} -4 & 3 \\ -5 & 4 \end{bmatrix} B$$

$$\textcircled{8} 40 - 40 = 0$$

singular!

$$\textcircled{9} X = [A]^{-1} [B]$$

with!

$$\begin{bmatrix} -5 & 6 \\ 0 & 2 \end{bmatrix}$$

$$\textcircled{10} x(x-6) - (12) = 32$$

$$x^2 - 6x - 44 = 0 \quad (\text{Quadratic formula})$$

$$\hat{x} = -4.28 \text{ and } 10.28$$

$$\textcircled{11} A = \begin{bmatrix} 6 & -2 \\ -5 & 2 \end{bmatrix} 12 - (10) = 2$$

$$A^{-1} = \frac{1}{2} \begin{bmatrix} 2 & 2 \\ 5 & 6 \end{bmatrix}$$

OR multiply for identity $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

$$A^{-1} = \begin{bmatrix} 1 & 1 \\ 5/2 & 3 \end{bmatrix} \text{ which is } B!$$