

## SOLVING SYSTEMS MATRIX APPLICATIONS

Provide the following for each application problem below:

- Define your variables.
- Write a system of linear equations.
- From your system of linear equations, write a matrix equation.
- ~~Use your calculator to~~ solve your matrix equation.
- Answer the question asked in each problem using a complete sentence.

$$x = \# \text{ 2-pts}$$

$$y = \# \text{ 3-pts}$$

7 two-pts.  
2 three-pts.

1. Greg is a star player on the basketball team. In one game, his field-goal total was 20 points, made up of 2-point and 3-point baskets. If Greg made a total of 9 baskets, how many of each type did he make?

$$\begin{cases} 1x + 1y = 9 \\ 2x + 3y = 20 \end{cases}$$

(c)  $\begin{bmatrix} 1 & 1 \\ 2 & 3 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 9 \\ 20 \end{bmatrix}$

$3 - 2$

$$\begin{bmatrix} x \\ y \end{bmatrix} = \frac{1}{1} \begin{bmatrix} 3 & -1 \\ -2 & 1 \end{bmatrix} \cdot \begin{bmatrix} 9 \\ 20 \end{bmatrix}$$
$$\begin{matrix} x \\ y \end{matrix} = \frac{1}{1} \begin{bmatrix} +7 \\ 2 \end{bmatrix}$$