Matrix Multiplication (continued)

Examples:

Compute: $\begin{bmatrix} 1 & 1 \\ 2 & -1 \\ 2 & 3 \end{bmatrix} \begin{bmatrix} 2 \\ 1 \end{bmatrix}$

Compute: $\begin{bmatrix} 1 & 2 & 1 \end{bmatrix} \begin{bmatrix} 1 & 1 \\ 2 & -1 \\ 2 & 3 \end{bmatrix}$

Compute: $\begin{bmatrix} 2 \\ 1 \end{bmatrix} \begin{bmatrix} 1 & 1 \\ 2 & -1 \\ 2 & 3 \end{bmatrix}$

Alternate Definition:

$$AB = A \begin{bmatrix} | & \cdots & | \\ b_1 & \cdots & b_p \\ | & \cdots & | \end{bmatrix} = \begin{bmatrix} | & \cdots & | \\ Ab_1 & \cdots & Ab_p \\ | & \cdots & | \end{bmatrix}$$

(why is this true?)