Student Name: _____

Score:

Multiplication of matrices

Find the product of the following matrices:

$$\begin{bmatrix} 2 & 1 \\ 2 & 8 \\ 3 & -2 \end{bmatrix} \begin{bmatrix} -3 & 4 & 7 \\ 9 & 1 & 8 \end{bmatrix} \begin{bmatrix} 11 & 2 \\ -3 & 5 \\ 7 & 3 \end{bmatrix} =$$

$$\begin{bmatrix} 7 & 2 \\ -1 & 3 \\ 5 & 6 \end{bmatrix} \begin{bmatrix} -1 & 12 \\ 10 & -3 \end{bmatrix} \begin{bmatrix} 1 \\ 4 \end{bmatrix}$$

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$$\begin{bmatrix} 6 & 3 & 5 \\ -1 & 2 & 3 \\ 7 & 1 & 1 \end{bmatrix} \begin{bmatrix} 2 & 4 \\ -2 & 7 \\ 4 & 3 \end{bmatrix}$$

$$\begin{bmatrix} 5 & 4 \\ 3 & 1 \end{bmatrix} \begin{bmatrix} -1 & 2 & 3 \\ 6 & 7 & 9 \end{bmatrix} \begin{bmatrix} 2 & 3 & 2 \\ 4 & -5 & 8 \\ 1 & 2 & -7 \end{bmatrix} =$$

Answer key

Multiplication of matrices

$$\begin{bmatrix} 2 & 1 \\ 2 & 8 \\ 3 & -2 \end{bmatrix}\begin{bmatrix} -3 & 4 & 7 \\ 9 & 1 & 8 \end{bmatrix}\begin{bmatrix} 11 & 2 \\ -3 & 5 \\ 7 & 3 \end{bmatrix} = \begin{bmatrix} 160 & 117 \\ 1224 & 446 \\ -292 & 11 \end{bmatrix}$$

$$\begin{bmatrix} 7 & 2 \\ -1 & 3 \\ 5 & 6 \end{bmatrix}\begin{bmatrix} -1 & 12 \\ 10 & -3 \end{bmatrix}\begin{bmatrix} 1 \\ 4 \end{bmatrix}$$

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$$\begin{bmatrix} 6 & 3 & 5 \\ -1 & 2 & 3 \\ 7 & 1 & 1 \end{bmatrix}\begin{bmatrix} 2 & 4 & \\ -2 & 7 & \\ 4 & 3 & 8 \end{bmatrix}$$

$$\begin{bmatrix} 5 & 4 \\ 3 & 1 \end{bmatrix}\begin{bmatrix} -1 & 2 & 3 \\ 6 & 7 & 9 \end{bmatrix}\begin{bmatrix} 2 & 3 & 2 \\ 4 & -5 & 8 \\ 1 & 2 & -7 \end{bmatrix} = \begin{bmatrix} 241 & -31 & -15 \\ 76 & -20 & -16 \end{bmatrix}$$