

Name _____

(Possible score: 3 points.)

Complete the following formula for multiplying two matrices. Show your work.

Answer:

$$\begin{bmatrix} f_{11} & f_{12} \\ f_{21} & f_{22} \end{bmatrix} \begin{bmatrix} g_{11} & g_{12} \\ g_{21} & g_{22} \end{bmatrix} = \begin{bmatrix} f_{11}g_{11} + f_{12}g_{21} & f_{11}g_{12} + f_{12}g_{22} \\ f_{21}g_{11} + f_{22}g_{21} & f_{21}g_{12} + f_{22}g_{22} \end{bmatrix}$$

$$= \begin{bmatrix} f_{11} \\ f_{21} \end{bmatrix} \begin{bmatrix} g_{11} & g_{12} \end{bmatrix} + \begin{bmatrix} f_{12} \\ f_{22} \end{bmatrix} \begin{bmatrix} g_{21} & g_{22} \end{bmatrix} .$$