

UC Merced Applied Math Problem of the Month

November 2023

$$\begin{bmatrix} 3 & 4 \\ 8 & 7 \end{bmatrix} \begin{bmatrix} 7 & 2 \\ 4 & 9 \end{bmatrix} = \begin{bmatrix} 37 & 42 \\ 84 & 79 \end{bmatrix}$$

Observe that the product of the two integer matrices such as the ones shown above has an interesting property. Let A and B be 2×2 matrices with integer elements between 1 and 9. Can you find other pairs of A and B with the same property? How many pairs are there in total?

To submit your solutions for a chance to win an Amazon gift card, and to find out detailed contest rules,

- scan the QR code to the right, or
- go to <https://appliedmath.ucmerced.edu/news-events/problem-month>

