Problem 8.6

Develop, debug, and test your own M-file to multiply two matrices—that is, $[X] = [Y][Z]$, where $[Y]$ is m by n and $[Z]$ is n by p. Employ `for...end` loops to implement the multiplication and include error traps to flag bad cases. Test the program using the matrices from Prob. 8.4.

Problem 8.4

Three matrices are defined as

$$[A] = \begin{bmatrix} 6 & -1 \\ 12 & 8 \\ -5 & 4 \end{bmatrix} \quad [B] = \begin{bmatrix} 4 & 0 \\ 0.5 & 2 \end{bmatrix} \quad [C] = \begin{bmatrix} 2 & -2 \\ 3 & 1 \end{bmatrix}$$

(a) Perform all possible multiplications that can be computed between pairs of these matrices.
(b) Justify why the remaining pairs cannot be multiplied.
(c) Use the results of **(a)** to illustrate why the order of multiplication is important.