

**Exercise :0** *Internalize the differences between the point-wise and regular versions of the operators by examining the results of the following expressions that use the variables  $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ ,  $B = \begin{bmatrix} 1 & 0 \\ 0 & 2 \end{bmatrix}$ , and  $C = \begin{bmatrix} 3 \\ 4 \end{bmatrix}$ . Note: some commands may result in an error message. Understand what the error is and why it was given.*

- $A*B$  vs.  $A.*B$  vs.  $B.*A$  vs.  $B*A$
- $2*A$  vs.  $2.*A$
- $A^2$  vs.  $A*A$  vs.  $A.*A$  vs.  $A.^2$  vs.  $2.^A$  vs.  $A^A$  vs.  $2^A$ . *The last one here might be difficult to understand...it is matrix exponentiation.*
- $A/B$  vs.  $A\B$  vs.  $A./B$  vs.  $A.\B$
- $A*C$  vs.  $A*C'$  vs.  $C*A$  vs.  $C'*A$
- $A\C$  vs.  $A\C'$  vs.  $C/A$  vs.  $C'/A$

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