Matrix Similarity Practice

I am listing out 5 matrices here $A - E$. If you'd like some practice, show that (1) A is similar to B using C, (2) B is similar to D using E, and (3) show that A is similar to D using CE. Or in other words

1. $AC = CB$
2. $BE = ED$
3. $A(CE) = (CE)D$

$$A = \begin{bmatrix} 2 & 1 \\ 1 & 2 \end{bmatrix}, B = \begin{bmatrix} 3 & 2 \\ 0 & 1 \end{bmatrix}, C = \begin{bmatrix} 1 & 0 \\ 1 & 2 \end{bmatrix}, D = \begin{bmatrix} 3 & 0 \\ 0 & 1 \end{bmatrix}, E = \begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix}$$