Exercise 4.4

$$\alpha = \begin{vmatrix} 24 & -13 & 7 & 9 & 5 \\ 11 & 16 & -37 & 99 & 64 \\ 1 & 4 & 2 & 2 & -3 \\ 31 & -42 & 78 & 55 & -3 \\ 62 & 47 & 29 & -14 & -8 \end{vmatrix} = 2 \begin{vmatrix} 24 & -13 & 9 & 5 \\ 11 & 16 & 99 & 64 \\ 31 & -42 & 55 & -3 \\ 62 & 47 & -14 & -8 \end{vmatrix} + \dots$$

The expansion of β results in exactly the same 4×4 matrices as in the expansion of α. The difference is that each coefficient is three times the corresponding coefficient in the α expansion. Thus we can factor out this 3 to arrive at $\beta = 3\alpha$.

This demonstrates Theorem 4.3 from the text, the *Row Scalar Property*.