a) $a_3\begin{vmatrix} 0 & a_1 & b_1 \\ 0 & a_2 & b_2 \\ b_4 & 0 & 0 \end{vmatrix} - a_4\begin{vmatrix} 0 & a_1 & b_1 \\ 0 & a_2 & b_2 \\ b_3 & 0 & 0 \end{vmatrix} =$

$a_3(b_4(a_1b_2 - a_2b_1)) - a_4(b_3(a_1b_2 - a_2b_1)) = (a_3b_4 - a_4b_3)(a_1b_2 - a_2b_1)$

b) $a_1\begin{vmatrix} a_2 & b_2 & 0 \\ b_3 & a_3 & 0 \\ 0 & 0 & a_4 \end{vmatrix} - b_4\begin{vmatrix} 0 & 0 & b_1 \\ a_2 & b_2 & 0 \\ b_3 & a_3 & 0 \end{vmatrix} = a_1(a_4(a_2a_3 - b_2b_3)) - b_4(b_1(a_2a_3 - b_2b_3))$

$= (a_1a_4 - b_1b_4)(a_2a_3 - b_2b_3)$