

MATH 54 – SOLUTION TO 3.1.9

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Expanding along the third row, and then along the first row, we get:

$$\begin{vmatrix} 6 & 0 & 0 & 5 \\ 1 & 7 & 2 & -5 \\ 2 & 0 & 0 & 0 \\ 8 & 3 & 1 & 8 \end{vmatrix} = 2 \begin{vmatrix} 0 & 0 & 5 \\ 7 & 2 & -5 \\ 3 & 1 & 8 \end{vmatrix} = (2)(5) \begin{vmatrix} 7 & 2 \\ 3 & 1 \end{vmatrix} = 10(7 - 6) = 10$$