10. First expand along the second row, then expand along either the third row or the second column of the remaining matrix.

$$\begin{vmatrix} 1 & -2 & 5 & 2 \\ 0 & 0 & 3 & 0 \\ 2 & -4 & -3 & 5 \\ 2 & 0 & 3 & 5 \end{vmatrix} = (-1)^{2+3} \cdot 3 \begin{vmatrix} 1 & -2 & 2 \\ 2 & -4 & 5 \\ 2 & 0 & 5 \end{vmatrix}$$

$$= (-3)\left((-1)^{3+1} \cdot 2 \begin{vmatrix} -2 & 2 \\ -4 & 5 \end{vmatrix} + (-1)^{3+3} \cdot 5 \begin{vmatrix} 1 & -2 \\ 2 & -4 \end{vmatrix} \right) = (-3)(2(-2) + 5(0)) = 12$$

or $$\begin{vmatrix} 1 & -2 & 5 & 2 \\ 0 & 0 & 3 & 0 \\ 2 & -4 & -3 & 5 \\ 2 & 0 & 3 & 5 \end{vmatrix} = (-1)^{2+3} \cdot 3 \begin{vmatrix} 1 & -2 & 2 \\ 2 & -4 & 5 \\ 2 & 0 & 5 \end{vmatrix}$$

$$= (-3)\left((-1)^{1+2} \cdot (-2) \begin{vmatrix} 2 & 5 \\ 2 & 5 \end{vmatrix} + (-1)^{2+2} \cdot (-4) \begin{vmatrix} 1 & 2 \\ 2 & 5 \end{vmatrix} \right) = (-3)(-4)(1) = 12$$