1, 2, 9, 12, ~~15~~, 14, 20, 21, 37

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# 3.1 Homework

1. $\begin{vmatrix} 3 & 0 & 4 \\ 2 & 3 & 2 \\ 0 & 5 & -1 \end{vmatrix} = 3\begin{vmatrix} 3 & 2 \\ 5 & -1 \end{vmatrix} - 0 + 4\begin{vmatrix} 2 & 3 \\ 0 & 5 \end{vmatrix}$

$= -34 + 40 = 6$

2. $-4 \cdot 5 + 21 = 1$

9. $3\begin{vmatrix} 0 & 0 & 5 \\ 7 & 2 & -5 \\ 3 & 1 & 7 \end{vmatrix} = 3\left|5(-1)^{1+3}\begin{vmatrix} 7 & 2 \\ 3 & 1 \end{vmatrix}\right|$

$3 \cdot 5 \cdot 7 - 2$

$3 \cdot 1$

$15 \cdot 1 = 15$

12. $3\begin{vmatrix} -2 & 0 & 0 \\ 6 & 3 & 0 \\ -8 & 4 & -3 \end{vmatrix} = 3\left(-2\begin{vmatrix} 3 & 0 \\ 4 & -3 \end{vmatrix}\right)$

$= 3(18) = 54$

15. $1 \cdot 3 \cdot (-2) + 0 + 4 \cdot 2 \cdot 5 -$
$0 - 10 = (-4)(0)$
$= 24$

19. Rows swaped means det changes sign

20. k is a scalar for one row → which means the det is unchanged and added to another

21. k scales one row the det is also scaled by k

37. $5A = \begin{bmatrix} 15 & 5 \\ 20 & 10 \end{bmatrix}$ $\det(5A) = 50$

$5\det(A) = 5(2) = 10$

$5\det(A) \neq \det(5A)$