

Score:

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SM 261 – Matrix Algebra – Quiz 13
Section 3.1 – Introduction to Determinants

1. Find the determinant of:

$$\begin{array}{r} + \\ - \\ + \\ - \\ + \end{array} \begin{vmatrix} 0 & 0 & 3 & 0 & 0 \\ 2 & 2 & 3 & 2 & 1 \\ 0 & 0 & 2 & 4 & 6 \\ 0 & 1 & 5 & 2 & 6 \\ 0 & 0 & 1 & 1 & 1 \end{vmatrix}$$

Expand about C_1

$$(-2) \begin{bmatrix} 0 & 3 & 0 & 0 \\ -0 & 2 & 4 & 6 \\ +1 & 5 & 2 & 6 \\ -0 & 1 & 1 & 1 \end{bmatrix} \xrightarrow[\text{ON } C_1]{\text{EXPAND}} (-2)(+1) \begin{bmatrix} 3 & 0 & 0 \\ 2 & 4 & 6 \\ 1 & 1 & 1 \end{bmatrix}$$

$$\xrightarrow[\text{R1}]{\text{EXPAND}} (-2)(+1)(3) \begin{vmatrix} 4 & 6 \\ 1 & 1 \end{vmatrix} = (-2)(1)(3)(4-6)$$

$$= (-2)(1)(3)(-2) = 12$$