

Q4

natalie coplin

Determinant

(7)

$$A = \begin{bmatrix} 1 & 1 & 3 \\ 1 & 2 & 2 \\ 1 & 0 & -1 \end{bmatrix}$$

then
inverse A^{-1}

$$\begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix} = a \begin{vmatrix} e & f \\ h & i \end{vmatrix} - b \begin{vmatrix} d & f \\ g & i \end{vmatrix} + c \begin{vmatrix} d & e \\ g & h \end{vmatrix}$$

$$1 \begin{vmatrix} 2 & 2 \\ 0 & -1 \end{vmatrix} - 1 \begin{vmatrix} 1 & 2 \\ 1 & -1 \end{vmatrix} + 3 \begin{vmatrix} 1 & 2 \\ 1 & 0 \end{vmatrix}$$

$$\begin{array}{l} a \quad 2 \times -1 = -2 \\ \quad 0 \times 2 = 0 \\ \quad \quad \quad -1 \times 1 = -1 \\ b \quad 1 \times -1 = -1 \\ \quad 1 \times 2 = 2 \\ c \quad 1 \times 0 = 0 \\ \quad 1 \times 2 = 2 \end{array}$$

$$\begin{array}{r} a - b + c \\ -2 - 1 + 6 \end{array}$$

$$\boxed{= 3}$$