

ENGINEERING MATHEMATICS

TUTORIAL 0 REVISION OF MATRIX ALGEBRA

$$\text{If } A = \begin{bmatrix} 3 & -2 & 0 \\ 4 & 2 & -1 \end{bmatrix}, \quad B = \begin{bmatrix} 1 & -7 & 5 \\ -2 & -1 & 3 \\ 0 & 2 & 0 \end{bmatrix}, \quad C = \begin{bmatrix} -1 & 0 \\ -1 & 2 \\ 4 & 3 \end{bmatrix},$$

$$D = \begin{bmatrix} -3 \\ 2 \\ -1 \end{bmatrix}, \quad E = [-1 \quad -1 \quad 2 \quad 3], \quad F = \begin{bmatrix} 2 & 1 & 0 \\ -4 & 1 & 3 \\ 0 & -3 & 2 \end{bmatrix}, \quad G = \begin{bmatrix} 2 & -1 \\ 3 & 5 \end{bmatrix}$$

1. Evaluate, where possible

(i) $A + B$ (ii) $A + C$ (iii) $B + F$ (iv) $D + C$ (v) $F - B$

2. Evaluate

(i) $3A$ (ii) $-2C$ (iii) $\frac{1}{2}F$ (iv) λG (v) αD

3. Evaluate, where possible :

(i) AB , (ii) AC , (iii) BC , (iv) DF , (v) FD , (vi) CA ,
(vii) BF , (viii) FB (ix) GA (x) GCA

4. Find the determinant (where possible) of:-

(i) B (ii) F (iii) G (iv) C

5. Find the inverse (where possible) of :-

(i) B (ii) F (iii) G (iv) A