

Lewis Nelsons 2008201 Mathematics test 2

Q1

$$AB \begin{pmatrix} 2 & -5 & 3 \\ -5 & 0 & 5 \\ 3 & 0 & 2 \end{pmatrix} \begin{pmatrix} -5 & 8 & 0 \\ 2 & 6 & 2 \\ 0 & -2 & 3 \end{pmatrix}$$

$$\begin{array}{l} -10 -10 + 0 \quad -10 -20 + 0 \quad 16 + 30 - 6 \quad 0 + 10 + 9 \\ 25 + 0 + 0 \quad -40 + 0 - 10 \quad 0 + 0 + 15 \\ -15 + 0 + 0 \quad 24 + 0 - 4 \quad 0 + 0 + 6 \end{array}$$

$$= \begin{pmatrix} -20 & -20 & -1 \\ 25 & -50 & 15 \\ -15 & 20 & 6 \end{pmatrix}$$

$$BA \begin{pmatrix} -5 & 8 & 0 \\ 2 & 0 & 2 \\ 0 & -2 & 3 \end{pmatrix} \begin{pmatrix} 2 & -5 & 3 \\ -50 & 5 \\ 30 & 2 \end{pmatrix}$$

$$\begin{array}{l} -10 -40 + 0 \quad 25 + 0 + 0 \quad -15 + 40 + 0 \\ 4 + 0 + 6 \quad -10 + 0 + 0 \quad 6 + 0 + 4 \\ 0 + 10 + 0 \quad 0 + 0 + 0 \quad 0 + 6 + 6 \end{array}$$

$$= \begin{pmatrix} -56 & 25 & 25 \\ 10 & -10 & 10 \\ 10 & 0 & 12 \end{pmatrix}$$