

**MAU11S02 second Monday quiz, week 3**  
**Monday 7/2/22 due 12 noon Thursday 10/2/22**

**Rules and procedures.**

**1.** Attempt 3 questions. Only *your first three answers* will be marked. **2.** Each question carries 20 marks, so the maximum quiz mark is 60. **3.** If a particular method of solution is stipulated, you get no marks if you don't use it. **4. *Show all work.*** No marks will be given for answers which do not show the calculations. **5.** Your answers should be scanned and submitted to Blackboard as a 'Monday assignment.'

**Question 1.** Using the adjoint matrix, no other method, invert

$$\begin{bmatrix} -2 & -4 & 2 \\ 4 & 6 & -2 \\ 2 & 4 & -3 \end{bmatrix}$$

**Question 2.** Let  $P, Q, R$  be the columns of the two matrices below. In each case, determine whether  $O, P, Q, R$  are coplanar.

$$\begin{bmatrix} 2 & 4 & 10 \\ 3 & 8 & 19 \\ 2 & 1 & 4 \end{bmatrix} \quad \begin{bmatrix} -2 & -6 & 6 \\ -1 & -3 & 5 \\ -1 & -5 & 7 \end{bmatrix}$$

**Question 3.** Find the first two minors in the cofactor expansion on the 3rd row of the following matrix.

$$\begin{bmatrix} -1 & 1 & -1 & 3 \\ 1 & -3 & 7 & -13 \\ 3 & 0 & -4 & 4 \\ 2 & -1 & -1 & -3 \end{bmatrix}$$

**Question 4.** Find the second two minors, along the 3rd row, and hence calculate the determinant of the matrix.

**Question 5.** Calculate the adjoint of the following matrix. Can it be used to invert the matrix?

$$\begin{bmatrix} -1 & -1 & -5 \\ -1 & -3 & -9 \\ 1 & -1 & 1 \end{bmatrix}$$