

# MEMORIAL UNIVERSITY OF NEWFOUNDLAND

## DEPARTMENT OF MATHEMATICS AND STATISTICS

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SECTION 3.1

Math 2050 Worksheet

WINTER 2018

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**For practice only. Not to be submitted.**

1. For each of the following matrices, (i) find the matrix of minors  $M$ ; (ii) find the matrix of cofactors  $C$ ; (iii) compute the product  $AC^T$  and use it to determine  $\det A$ ; (iv) use these results to find  $A^{-1}$ , if it exists.

(a)  $A = \begin{bmatrix} 2 & -5 & -1 \\ -3 & -1 & 0 \\ 2 & 4 & -3 \end{bmatrix}$

(b)  $A = \begin{bmatrix} 4 & -8 \\ -3 & 6 \end{bmatrix}$

2. Find the determinant of each of the following matrices by expanding along an appropriate row (or column).

(a)  $A = \begin{bmatrix} 4 & 0 & 1 \\ -2 & -2 & -5 \\ 9 & 1 & 3 \end{bmatrix}$

(b)  $B = \begin{bmatrix} 1 & -3 & -3 & 4 \\ 0 & 5 & 1 & 0 \\ -1 & 0 & 1 & -1 \\ -4 & 4 & 2 & 1 \end{bmatrix}$

(c)  $C = \begin{bmatrix} -2 & 7 & -1 & -5 \\ 1 & 1 & -2 & 0 \\ 0 & -3 & 4 & 0 \\ 3 & 3 & 2 & 0 \end{bmatrix}$