

**M351 AHW§8.5 det prop** (S. Zhang) .

1. (8.5:a1) Find the determinant
  - (1) by cofactor expansions (no row/column operations)
  - (2) by row operations to an upper triangular matrix.
  - (3) by smart combinations of row op and expansion.

$$A = \begin{pmatrix} 2 & 0 & 4 & 0 \\ 5 & -10 & 0 & 5 \\ 0 & 2 & 4 & -2 \\ 1 & 2 & 0 & 2 \end{pmatrix}$$

2. (8.5:a2) Find the determinant
  - (1) by cofactor expansions (no row/column operations)
  - (2) by row operations to an upper triangular matrix.
  - (3) by smart combinations of row op and expansion.

$$A = \begin{pmatrix} 2 & 0 & 4 & 0 \\ 5 & -10 & 0 & 5 \\ 0 & 2 & 4 & -2 \\ -5 & 24 & 12 & -10 \end{pmatrix}$$

3. (8.5:a3)  $|A_{4 \times 4}| = -2$ ,  $|B_{4 \times 4}| = -3$ , find

$$|2A|, |A^T B|, |-2B^T A|, |B^2|$$