姓名: SOLUTION　　葉均承　　應數一線性代數

學號: _____　　**Quiz 13**　　考試日期: 2025/12/17

不可使用手機、計算器，禁止作弊!

1. Let A be a 5×5 matrix with row vectors $\vec{a}, \vec{b}, \vec{c}, \vec{d}, \vec{e}$ and with determinant equal to 30. Find the determinant of the following matrices.

   (a) B is the matrix having row vectors $(\vec{a}+3\vec{e}), (3\vec{a}+7\vec{b}+6\vec{c}), \vec{b}, (5\vec{d}+\vec{b}-8\vec{e}), \vec{e}$. $det(B)$= **-900**

   (b) Let D is A^{-1}. $\det(D)$= **1/30** .

   (c) Let E is A^T. $\det(EA)$= 900 .

   (d) Let F is $3A$. $\det(F)$= 7290 .

Solution：

Similar to 112-1 quiz 15.

2. Prove or disprove the following:

   If A, B are $n \times n$ matrices and if A is singular, then AB is singular.

Solution：

4-3 problem 30.