

1. 請框出答案. 2. 不可使用手機、計算器，禁止作弊!

1. Find a formula for the linear transformation $T : \mathbb{R}^2 \rightarrow \mathbb{R}^2$ that reflects vectors in the line $2x - y = 0$.

Answer: $T([x, y]) = \underline{\frac{1}{5}[-3x + 4y, 4x + 3y]}$

2. If λ is an eigenvalue of an invertible matrix A with \vec{v} as a corresponding eigenvector, please prove that $\lambda \neq 0$ and $1/\lambda$ is an eigenvalue of A^{-1} , again with \vec{v} as a corresponding eigenvector.

Solution :

Section 5-1 # 28, 我上課有證過。