不可使用手機、計算器，禁止作弊!

1. Circle each of the following True or False. If it is True, please prove it. If it is False, please explain why.

    (a) True   False   An $n \times n$ symmetric matrix A is a projection matrix if and only if $A^2 = I$.

2. Find the projection matrix for the plane $x + 2y - z = 0$ and then find the projection of $[2, 1, 3]$ on the plane.

    Answer: _____