

## Lecture 25 Problems

### Problem

Step 1 is fine, thus the problem must lie in the division and subsequent implication that

$$x^T A x = \lambda x^T x \Rightarrow \lambda = \frac{x^T A x}{x^T x}$$

does  $x^T x \neq 0$ ?

$$\begin{bmatrix} 1 & 1 \end{bmatrix} \begin{bmatrix} 1 \\ 1 \end{bmatrix} = 1^2 + 1^2 = 0. \text{ Thus here is the mistake,}$$

## Problem 2

(a): No

(b): Yes

(c): Yes

(d): ~~No~~ Yes