4.43

<a> $\min \lambda_{max}(A(x)) \Rightarrow \min t$

subject to $\lambda_{max} A(x) \leq t$

$\Rightarrow \min t$

subject to $\lambda_i (A^{(x)} - tI) \leq 0$, $i = 0, 1, \ldots n$

$\therefore A(x) - tI$ is negative semidefinit

$\therefore$ $\min t$

subject to $A(x) - tI \leq 0$

<b> let: $\lambda_{min}(A(x)) = r$, from above, we know

$\min \quad t - r$

Subject to $A(x) - tI \leq 0$

$A(x) - rI \geq 0$