Part of Homework 5:

I. Show that the relation of similarity is reflexive ($A \approx A$), symmetric ($A \approx B \Rightarrow B \approx A$) and transitive ($A \approx B, B \approx C \Rightarrow A \approx C$).

Recall that

$$A \approx B \Leftrightarrow \exists P \quad \text{such that } B = P^{-1}AP.$$