Last name _____

First name _____

LARSON—MATH 756—CLASSROOM WORKSHEET 21
Knuth—Sandwich Theorem

Review

1. What is Knuth's definition of $G \subseteq G'$?
2. Why does $G \subseteq G'$ imply $STAB(G') \subseteq STAB$?
3. Why does $G \subseteq G'$ imply $TH(G') \subseteq TH(G)$?
4. Why does $G \subseteq G'$ imply $QSTAB(G') \subseteq QSTAB(G)$?

New

1. What is Knuth's definition of ϑ_1?

2. Can we find ϑ_1 for the path P_3?

3. Why does $\vartheta \leq \vartheta_1$ for any graph?

4. What is a *feasible* matrix for a graph G?

5. What is a *feasible* matrix for the path P_3?

6. What can we say about feasible matrices?

7. What is Knuth's definition of ϑ_2?

8. Can we find ϑ_2 for P_3?

9. What is the main idea of the proof that $\vartheta_1 \leq \vartheta_2$?

10. If A is a symmetric matrix with largest eigenvalue λ, what are the eigenvalues of $B = \lambda I - A$? (Why is B a *semidefinite* matrix?)