

Problems

1. Show

- (a) **INDEPENDENT-SET** \leq_P **CLIQUE**, and
- (b) **CLIQUE** \leq_P **INDEPENDENT-SET**.

2. Show

- (a) **VERTEX-COVER** \leq_P **INDEPENDENT-SET**, and
- (b) **INDEPENDENT-SET** \leq_P **VERTEX-COVER**.

3. Show **UHAMCYCLE** \leq_P **TSP**.

4. Show **HAMPATH** \leq_P **LPATH**.

5. Show **CLIQUE** \leq_P **SUBGRAPH-ISOMORPHISM**.

6. Show

- (a) **HAMPATH** \leq_P **HAMCYCLE**, and
- (b) **HAMCYCLE** \leq_P **HAMPATH**.

7. Show

- (a) **UHAMPATH** \leq_P **UHAMCYCLE**
- (b) **UHAMCYCLE** \leq_P **UHAMPATH**

8. Show that

- (a) **ANY-HAMPATH** \leq_P **HAMPATH**, and

(b) **HAMPATH** \leq_P **ANY-HAMPATH**.

9. Show

(a) **UHAMPATH** \leq_P **HAMPATH**, and

(b) **HAMPATH** \leq_P **UHAMPATH**.

10. Show **VERTEX-COVER** \leq_P **DOMINATING-SET**.