Subject: Recitation 8 (Year Month Date)

Problem 1.

1. $\vdots$

2. "add to obtain"

Problem 2

(a) $|E \cup \{e\}| = |V|$ → cyclic.

(b) by (a) when we add $\{e\}$ we get a cycle. So we remove another edge from the cycle. $E - \{e'\} \cup \{e\}$ is a tree.

(c) if $\forall e' \in S \rightarrow S \cup \{e\}$ would have a cycle.

(d) Proof. by Induction.

I.H. $P(m) ::= m < |V| \rightarrow \exists E, S_m \subseteq E$

B.C. $P(0)$ ✓

I.S. e is the $(m+1)$st edge,

Case 1, $e \in E$ ✓

Case 2, by lemma 4 $e \in E^*$

E^* is mst because $wt(e) < wt(e')$

(e) if $S \neq E$ → keeps running