

**Assignment #1. Due Thurs Feb 4.**

1. Indicate which of the following strings of symbols qualify as *wffs* in **PL**. For those that qualify, draw their construction trees.

- (a)  $(\neg P \wedge P')$
- (b)  $(P \wedge (Q \vee R') \wedge S)$
- (c)  $(\neg P')$
- (d)  $((P'' \vee \neg Q) \wedge R')$
- (e)  $\neg(\neg P')$

2. Calculate the truth value of the *wffs* given below, based on the following truth values of their atoms. In each case draw the tree form of your calculation.

$$P' \Rightarrow T, Q \Rightarrow F, R \Rightarrow T$$

- (a)  $((P' \wedge Q) \vee \neg R)$
- (b)  $(\neg P' \vee \neg R)$
- (c)  $((R \wedge Q) \wedge \neg(P' \vee \neg Q))$
- (d)  $(\neg(Q \wedge R) \vee P')$
- (e)  $((P' \vee \neg R) \wedge (\neg Q \wedge R)) \vee \neg P'$