

**Haifa MA Micro I. Fall 2010**  
**Assignment 1: Preferences**

**The due date for this assignment is Monday October 25.**

1. If there is completeness and weak transitivity holds, does  $x \not\succ y$  and  $y \not\succ z$  imply  $x \not\succ z$ ?
2. Show that weak transitivity implies strong transitivity. (Hint. First show that it implies  $x \succsim z$ . Next, show that if  $z \sim x$ , then there is a contradiction in that  $z \succ y$ .)
3. Show that if weak transitivity holds,  $x \succ y$  and  $y \sim z \implies x \succ z$ .
4. Give an example in real life where transitivity doesn't apply.
5. There are 4 contestants for Pop Idol (Chohav Nolad): A,B,C,D. There are 3 voters: Jim, Sean and Doug. Jim's preferences are  $A \succ B \succ C \succ D$ . Sean's preferences are  $B \succ C \succ D \succ A$ . Doug's preferences are  $C \succ D \succ A \succ B$ . Can you design a tournament where  $D$  wins?