

# CSC165, Summer 2005, Assignment 2

## first portion of hints

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1. A counterexample for these questions might consist of exhibiting some values for  $x$ ,  $y$ , and  $z$  that make a given sentence false. Explaining why a sentence is true might consist of citing some well-known property of  $\mathbb{R}$  or  $\mathbb{N}$ .
2. See today's (June 16th's) lecture.
3. This transformation was covered in June 9th's lecture.
4. The English word "any" corresponds to different quantifiers in parts (a) and (e). Check with me if in doubt.
5. A counterexample might be a Venn diagram for which one of the sentences is true and the other false. Showing they are equivalent might use the transformations we looked at on June 9th.