MATH 347 HW 6

Homework Guildlines

Obviously, your solutions need to be complete and correct, but to receive full credit your write-up should also satisfy the following:

- All the important logical steps in the proof should be present and fully explained.
- All assumptions should be clearly identified.
- Your solutions should be clear and concise. If a sentence does not further the reader's understanding of the solution then it has no place in your write up.
- Use full and grammatically correct English sentences. Mathematical symbols should be used only to render complex mathematical relationships into a readable form.

Moreover, in order to obtain full credit for the homework, you must write down, in the very least, an attempt at a solution for each problem.

Problems

Do the following problems from your book: 4.22, 4.24, 4.31, 4.33. Also answer the following:

(1) Let X and Y be sets. Suppose that $f : X \to Y$ is a bijection. Show that there is a bijection $\mathscr{P}(X) \to \mathscr{P}(Y)$. Explicitly describe the function and its inverse in terms of f. (Hint: Inverse images may be helpful.)