Topology   Spring 2009   Homework Ch 8, Sections A,B

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Name

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Draft Due:

Final Version Due:

"Mathematics seems to endow one with something like a new sense." – Charles Darwin

"The intelligent man finds almost everything ridiculous, the sensible man hardly anything." – Johann von Goethe

"Mathematics is the study of analogies between analogies." – Gian Carlo Rota in "Indiscrete Thoughts".

"A mind that is stretched to a new idea never returns to its original dimension." Oliver Wendell Holmes

Directions

You have some choice on which of the following problems you turn in but I expect you to think about all of them. Remember, you may discuss any of these with anyone but there is to be no collaboration on how to write them up.

Chapter 8, Sections A and B

Do any three of

- Exercise 2

- Exercise 3 – Define a specific function and carefully show it is a bijection. Use pictures to illustrate why the function and its inverse are both continuous.

- Exercise 6 – Don't forget to show the function is well-defined.

- Exercise 8 – Define the function and carefully show it and its inverse are continuous.

- Exercise 11 – Using pictures is fine.

- Exercise 12 – You may use pictures to make a convincing illustrative argument.