Ling 510: Lab 2 Practice
Ordered Pairs, Relations, and Functions
Sept. 16, 2013

For all of the following exercises, assume that A = {Lucy, Nick, Emma} and B = {Linguistics, Philosophy}.

(1) Cartesian Products

Specify the following sets by listing their members.

a. $A \times B$

b. $B \times A$

c. $A \times A$

d. $B \times B$

Relations and Functions

(2) Which of the following sets are relations from A to B? Which are functions from A to B? If they are functions, are they total or partial?

a. { <Lucy, Linguistics> }

b. {Lucy, Linguistics}

c. { <Linguistics, Lucy> }

d. { <Lucy, Linguistics>, <Nick, Philosophy> }

e. { <Lucy, Philosophy>, <Emma, Philosophy>, <Nick, Philosophy> }

f. { <Lucy, Linguistics>, <Lucy, Philosophy>, <Nick, Linguistics> }

(3) By listing its members, specify 1 further relation from A to B that is not a function from A to B.

(4) By listing its members, specify 1 further relation from A to B that *is* a function from A to B.

(5) **For the following functions, tell me if they are partial, total, one-to-one, and/or functions *onto* the range**.

a. F = { <Lucy, Linguistics>, <Nick, Linguistics>, <Emma, Philosophy>}

b. G = { <Lucy, Philosophy>, <Nick, Linguistics>}