

HOMEWORK #1  
Math 6014

**Problem 1.** Let  $t_1, t_2, t_3$  be vertices of a tree  $T$ . Prove that there is a unique vertex  $t$  of  $T$  such that for every  $i, j = 1, 2, 3$  with  $i \neq j$  the vertex  $t$  lies on the unique path between  $t_i$  and  $t_j$  in  $T$ .

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**Instructions:** You are only allowed to use your own notes, class handouts and the designated textbook. Clarity of exposition, ease of expression, mathematical elegance and overall physical appearance will all be factors in grading. Please start your work on a new page, and sign and attach this sheet. If submitting a pdf file electronically, include the appropriate statement in the body of the message. This assignment is due before 3:05PM, Wednesday, September 3, 2008.

**Format:** Please type your solution on one-sided letter size paper in 10pt font or larger. Figures and mathematical formulae may be drawn by hand in black ink. Do not fold pages or bend corners.

NAME (please print):

GTid#:

Please check the box that applies.

The attached paper represents my own work. I have not consulted with anyone else during the work on this assignment, and I have not used any sources other than those listed above. I understand that making a false statement is a violation of Georgia Tech honor code.

I have consulted with the following persons and used the following sources:

Signature:

Date: