

CS 301, Summer 2017
Lab 4
DUE: 11:59pm Friday, July 21
60 Points Total

This lab consists of two parts (1) practice using the Microsoft Equation editor and (2) writing Racket procedures to simulate properties of relations.

Part 1. Using the Microsoft Equation editor, create an equation identical to the following:

$$\frac{\frac{\alpha}{\left(\sqrt{a^2 + b^2}^3 + \pi^2\right)}}{\frac{\beta}{\omega^{-1}}} = \begin{bmatrix} \alpha & \delta \\ \eta & \xi \end{bmatrix}$$

Part 2. Implement the following Racket functions:

1. **Reflexive?**

Input: a list of pairs, **L** and a list **S**. Interpreting **L** as a binary relation over the set **S**, **Reflexive?** returns **#t** if **L** is a reflexive relation over the set **S** and **#f** otherwise.

2. **Symmetric?**

Input: a list of pairs, **L**. Interpreting **L** as a binary relation, **Symmetric?** returns **#t** if **L** is a symmetric relation and **#f** otherwise.

3. **Transitive?**

Input: a list of pairs, **L**. Interpreting **L** as a binary relation, **Transitive?** returns **#t** if **L** is a transitive relation and **#f** otherwise.

To turn this assignment in:

This lab will be turned in by posting a Word file with the assigned equation and a Racket file with the definitions of the assigned functions.