

University of Nevada, Las Vegas Computer Science 477/677 Fall 2020

Assignment 6: Due Thursday October 22, 2020

Name: \_\_\_\_\_

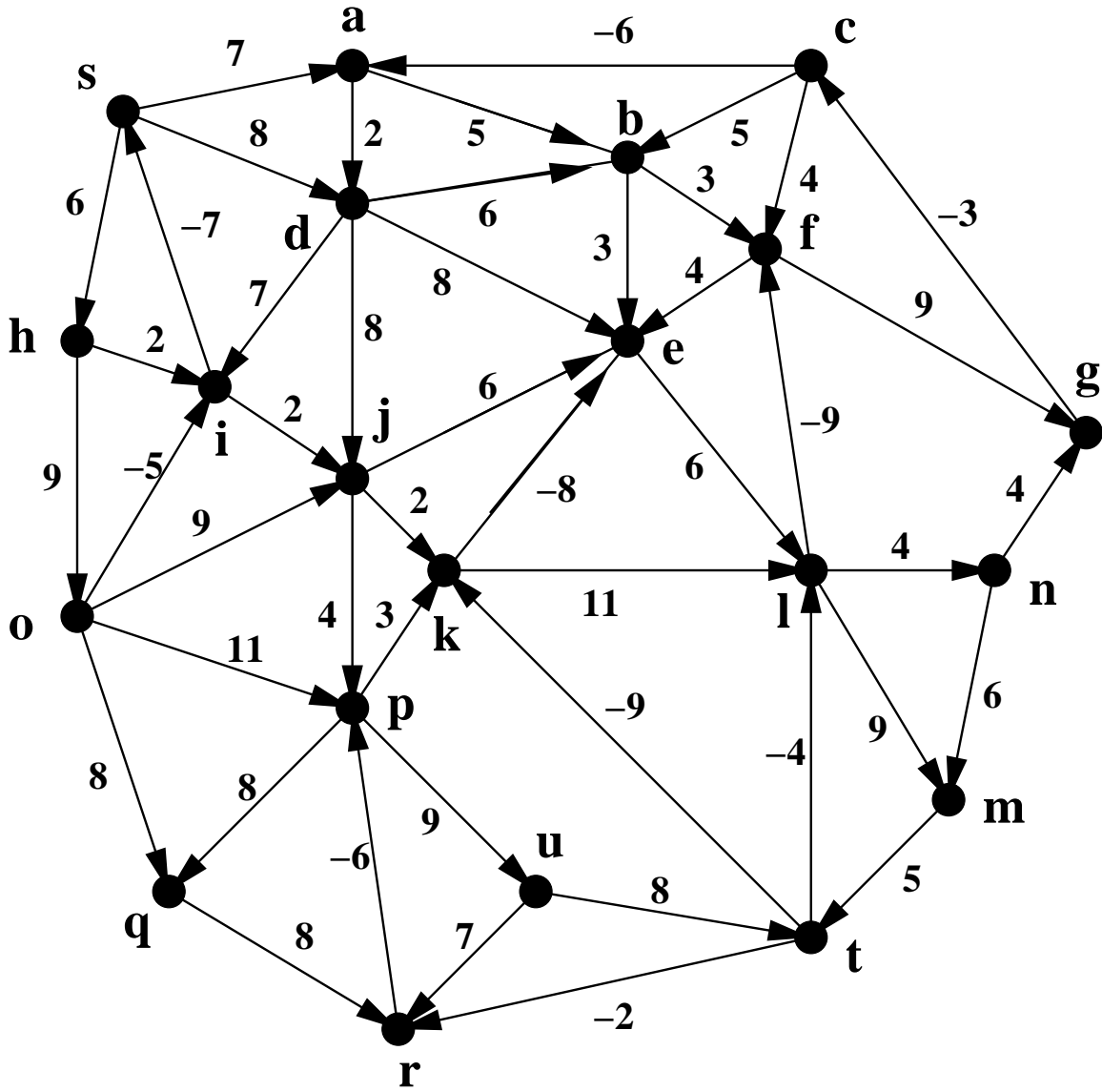
You are permitted to work in groups, get help from others, read books, and use the internet. Your answers must be written in a pdf file and emailed to the graduate assistant, Tandreana Chua [chuat4@unlv.nevada.edu](mailto:chuat4@unlv.nevada.edu), by midnight October 22. Your file must not exceed 5 megabytes, and must print out to at most 4 pages.

1. There is a stack algorithm that converts any infix expression to an equivalent postfix expression. This is important because programmers write expressions in infix, but computer evaluate postfix (or prefix) expressions. Explain that algorithm, using pseudocode or just plain English or some combination of both.

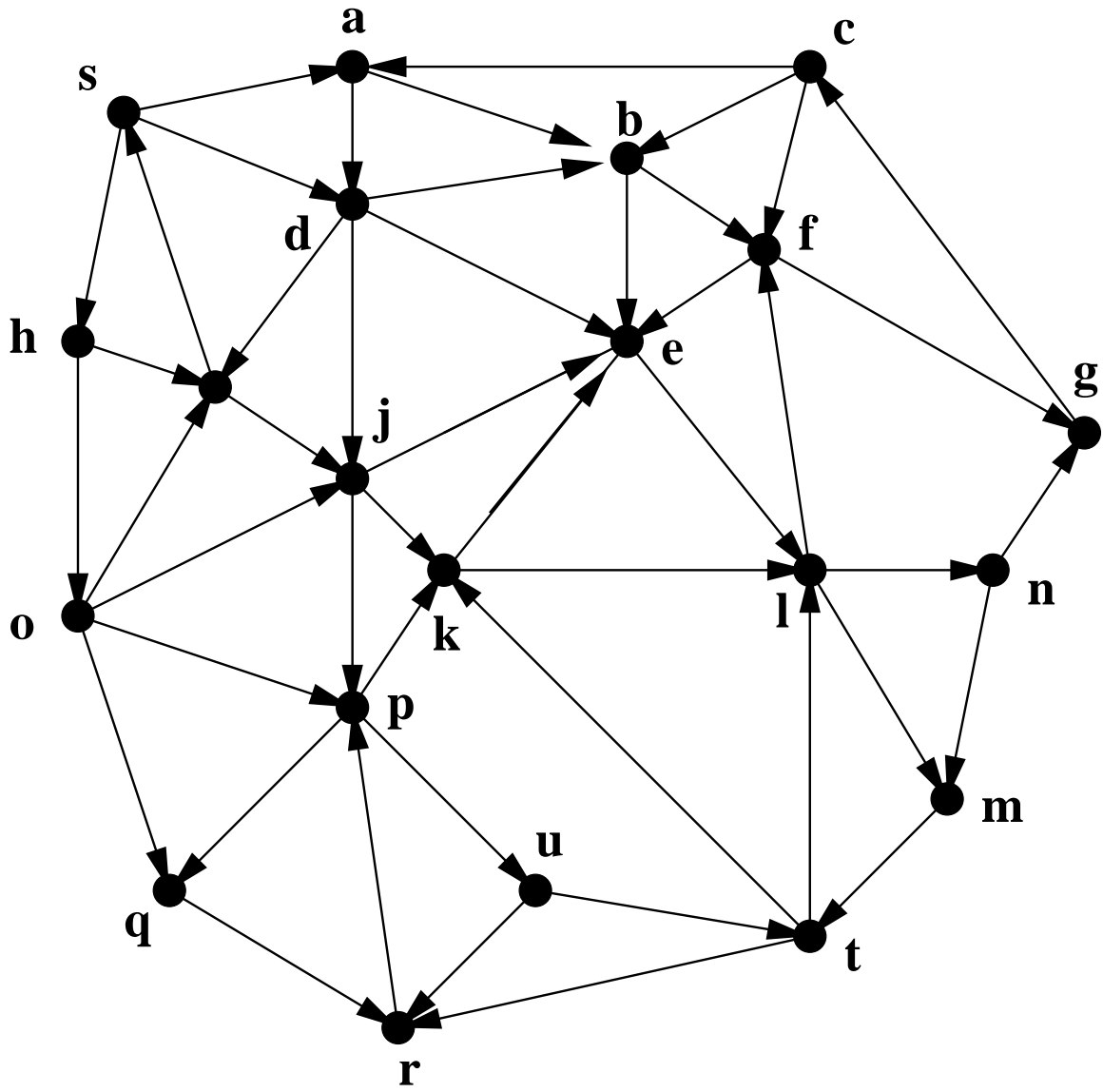
A postfix expression cannot use the subtraction symbol to mean negation. Assume that “-” is used for subtraction and “~” is used for negation in postfix expressions, but “-” is used for both subtraction and negation in infix expressions.



3. The first step of Johnson's algorithm is to compute the heuristic function. On the weighted directed graph (a) below, label each node of (a) with the correct heuristic. (You do not have to show the steps of the algorithm for this. The example is small enough that you can simply compute the values in your head.) The next step is to adjust the arc weights. Label the arcs of (b) with the adjusted weights.



(a)



(b)