CS 442/542 Spring 2021 Quiz 1   **Name:**_____

Please type your answers.

1. Define the following compiler terms

a. Parser Generator

b. Fixed-Point Computation

2. Systems that implement regular expressions (such as flex) often have operators that make writing regular expressions easier. The following are some examples of these operations. For each item write a regular expression that uses only the basic operations I showed in the lecture (concatenation RS, union R|S and closure R*) as translations of the operations shown below. In the following assume the alphabet is {0,1,2,3,4,5,6,7,8,9}

a. . is a regular expression that specifies the language {0,1,2,3,4,5,6,7,8,9}. Note the expression is just a single period or dot.

b. [0-2] {1,2} is a regular expression that specifies the language {x | x is a string of 0s, 1s and 2s that is between 1 and 2 characters long inclusive}. Some example strings in the language are 21, 10, 12, 2, 00, 1.

c. [^0-6]+ is a regular expression that specifies the language {x | x is a string of 7s, 8s and 9s that is one or more characters long}. Some example strings in the language are 8, 988797, 999, 87.