CSE 465/565
Fall 2018
Homework #6
100 points

Submit a single PDF file (titled hw6.pdf) with your answers in Canvas. For each exercise, you will see the points in parenthesis (same number of points for undergraduate and graduate students). You can include good quality, readable pictures of your hand-written solutions in the hw6.pdf file.

1. **(30 p) Variadic methods (i.e., methods with a variable number of parameters) in Java and C#**
   Look at the programs below in Java and C#:

```
public class hw6 {
      public static int adder(***TODO***)  {
            int sum = 0;
            ***TODO***
            return sum;
      }
      public static void main(String [] args) {
            int x = adder(1,2,3,4,5,6);
            System.out.println("x = " + x);
            int y = adder(1,5);
            System.out.println("y = " + y);
            int z = adder();
            System.out.println("z = " + z);
      }
}
```

```
using System;
namespace hw6 {
      class hw6 {
            public static int Adder(***TODO***)
            {
                  int sum = 0;
                  ***TODO***
                  return sum;
            }

            public static int Main(String [] args)
            {
                  int x = Adder(1,2,3,4,5,6);
                  Console.WriteLine("x = {0}", x);
                  int y = Adder(1,5);
                  Console.WriteLine("y = {0}", y);
                  int z = Adder();
                  Console.WriteLine("z = {0}", z);
                  return 0;
            }
      }
}
```

Replace the text ***TODO*** in the two programs above in the PDF file *hw6.pdf* that you will submit with the appropriate code, so that the methods `adder` and `Adder` respectively accept a variable number of parameters. The programs are also available to you in the files *hw6.java* and *hw6.cs*.

The expected output for both programs is:

```
x = 21
y = 6
z = 0
```

2. **(40 p) Chapter 10, Problem Set, exercise 3.**
   Include a picture of your solution to this exercise in the *hw6.pdf* file that you submit. You can draw the picture by hand on a piece of paper and include a good quality of the picture in the pdf file that you submit.

3. **(30 p) BNF Syntax**
   Using the BNF description of the syntax of Pascal given at:

   http://condor.depaul.edu/ichu/csc447/notes/wk2/pascal.html

   a) Write the shortest Pascal **case statement** (shortest in terms of the number of tokens)
   b) Write the shortest Pascal **program** (shortest in terms of the number of tokens).

   Note that ε refers to the empty string (no characters).