Homework Turnin

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Section:	6G
Course:	TJHSST APCS 2016-17
Assignment:	06-03
Receipt ID:	7218772deda7e66d69901feb5ba3ed0d

Turnin Successful!

The following file(s) were received:

Infix.java (1973 bytes)

```
  //name:   date:
import java.util.*;
public class Infix
{
   public static void main(String[] args)
   {
      System.out.println("Infix  -->  Postfix  -->  Evaluate");
      /*enter code here  */
      ArrayList<String> infixExp = new ArrayList<String>();

      infixExp.add("3+4*5");
      infixExp.add("3*4+5");
      infixExp.add("(4+5)-5*3");
      infixExp.add("(3+4)*(5+6)");
      infixExp.add("(3*(4+5)-2)/5");
      infixExp.add("8+1*2-9/3");

      for( String s : infixExp )
      {
         String pf = infixToPostfix(s);
         System.out.println(s + "       " + pf + "       " + Postfix.eval(pf));
      }
   }
   public static String infixToPostfix(String infix)
   {
      String postfix = "";
      Stack<String> stack = new Stack<String>();
      final String operator = "+-*/";

      for(char x: infix.toCharArray())
      {
         if(Character.isDigit(x))
            postfix += x;
         else if(x == '(')
            stack.push(x+"");
         else if(x == ')')
         {
            while(!stack.peek().equals("("))
               postfix += stack.pop();
            stack.pop();
         }
         else if(operator.indexOf(x)!=-1)
         {
            while(!stack.isEmpty()&&!stack.peek().equals("(")&&!isLower(stack.peek().charAt(0),x))
               postfix+=stack.pop();
            stack.push(x+"");
         }
      }
      while(!stack.isEmpty())
         postfix+=stack.pop();
      return postfix;
   }
   //returns true if c1 has strictly lower precedence than c2
   public static boolean isLower(char c1, char c2)
   {
      if((c1 == '+' || c1 == '-') && (c2 == '*' || c2 == '/'))
         return true;
      else
         return false;
   }
}

   /*
 Infix  -->  Postfix  -->  Evaluate
 3+4*5       345*+       23
 3*4+5       34*5+       17
 (4+5)-5*3       45+53*-       -6
 (3+4)*(5+6)       34+56+*       77
 (3*(4+5)-2)/5       345+*2-5/       5
 8+1*2-9/3       812*+93/-       7
   */

```