Lab 1
C++ - Operator Overloading

Reading: Chapter 16, 17, 19

Grading:		
	Documentation & Style (indentation, spacing, etc)	3 points
	Term Class – Term.cpp	
	Constructor, Accessors, Mutators (1 point each)	5
	Overloaded Operator Function Definitions (3 points each)	15
	Test Program Lab10.cpp	2
	Total possible	25 points

The Term class represents a term in a polynomial such as $2x^4$ or $9x^2$.

For the purpose of this assignment:

- Adding Terms can only be done if the exponents are the same. $ax^n + bx^n = (a+b)x^n$
- Subtracting Terms can only be done if the exponents are the same. $ax^n - bx^n = (a-b)x^n$
- If the exponents aren't the same, the addition and subtraction operators should return a Term with 0 as the coefficient and 0 as the exponent.
- Multiplication $ax^m * bx^n = (a*b)x^{(m+n)}$
- Output a term in the customary format, using ^ to indicate the exponent (instead of a superscript).

  2x^4 or 9x^2

Here is the Term Class definition:

```
class Term
{
    friend ostream &operator<<( ostream &, const Term & );
    friend istream &operator>>( istream &, Term & );

    private:
       int coefficient;
       int exponent;

   public:
      Term ( int coef = 0, int exp = 0 );
      void setCoefficient ( int );
      void setExponent ( int );
      int getCoefficient ();
      int getExponent( );
      Term operator+ (const Term & ) const;
      Term operator- (const Term & ) const;
      Term operator* (const Term & ) const;
};
```

- Place the Term class definition in Term.h. Write the function defintions in a file called Term.cpp.
- Write a test program called Lab10.cpp.
- Your test program should contain statements such as:

```
Term k(2, 3);
Term r;
cin >> r;
cout << “the sum of k and r is “ << (k + r) << endl;
```

- Write a makefile to compile all programs and create an executable called Lab10.
- Zip or tar your programs and the makefile. Submit the zip or tar file.