ECOR 1606B Winter 2008/09 – Midterm Test

Question 1:

What output would be produced by the code snippet below? "i" and "j" are integer variables.

```
i = 3; j = 7;
while (i <= 16) {
        if (i % 3 == 0) {
                cout << i << endl;
        }
        j = j + 4;
}
cout << j << endl;
```

Question 2:

Suppose we would like to replace the code shown below with code that i) has **EXACTLY** the same effect but that ii) makes use of a "do while" instead of a "while". Show how this can be accomplished.

```
while (a < 46) {
        b = B + 12; a = a + 1;
}
```

Question 3:

Write a C++ program that reads in two integers and that then outputs all of the integers between the two values (including the values themselves). The values must be output in **ASCENDING** order and each value should appear on a separate line. Note that there is no guarantee that the first value entered will be smaller than the second (or vice versa).

example: If 6 and 2 are input the program should output.

2
3
4
5
6

Question 4:

Write a program that reads in three floating point values and that outputs the greatest of these values.

Question 5:

The future value of X dollars invested for Y years at I percent can be found by applying the following equation:

$$Value = X(1 + I/100)^Y$$

Write a program that reads in I and that then outputs a table giving the future value for X from \$1000 to \$5000 (in \$1000 steps) and Y from 10 to 30 years (in 5 year steps). Future values must be output with two decimal places and the table must be formatted exactly as shown in the example below. Note that the column widths at the bottom are NOT part of the table but are simply there to help you.

Note: Function *pow* is useful here. *pow*(x, y) gives x to the y^{th} power

Example:

```
Enter the interest rate in percent: 5

              1000       2000       3000       4000       5000
      10    1628.89    3257.79    4886.68    6515.58    8144.47
      15    2078.93    4157.86    6236.78    8315.71   10394.64
      20    2653.30    5306.60    7959.89   10613.19   13266.49
      25    3386.35    6772.71   10159.06   13545.42   16931.77
      30    4321.94    8643.88   12965.83   17287.77   21609.71

<-- 8 -><-- 10 --><-- 10 --><-- 10 --><-- 10 --><-- 10 -->
```