May 29, 2015 Quiz 2

Total Score ______. Your work is to be done individually. The quiz is worth 50 points and it has 8 questions. Unless a problem directly instructs you differently, there are no known errors within this document. All programming solutions will be implemented in the C programming language. You only need to write the fragment of code that directly answers each question. Unless otherwise specified you do not have to write a full program for any of the questions.

1. [10 pts] After the following expressions are evaluated, what are the values of h,m,n,x, & y?
Note that the expressions are all in one program, each expression might affect the next.

```c
float h, m;
int n, x = 2, y = 4;
h = (x * (y - 2) + x % y)/4.0f;
m = y++ / 3 + x;
n = y % 3 - (--x) + 2;
```

```
h = 1.5  m = 3.0f  n = 3  x = 1  y = 5
```

2. [9pts] What is the result of these three expressions? (Either TRUE or FALSE)

```c
int x = 4, y = 10;

(x != 4) && (x == 4)  // FALSE
(y > 10) || (y != 4) || (y < 10)  // TRUE
(x > y) && (x == 4) || (y < 5) && (++y > 10)  // FALSE
```

3. [6pts] What are the values of p and q after the following statements:

```c
int p, q, a = 4, b = 5;
p = (a + b < 5) ? (a + b) : (a - b);
p = -1
q = (a < b) ? (a < 0) ? (a) : (b) : (p);
q = 5
```

4. [5 pts] What is the first line in most of our programs which includes the input/output library.
(Yes this is an easy question worth 5pts! Trying to help you out!)

```
#include <stdio.h>
```
5. [20pts] Create a **switch** statement that will determine if the char *consonant* stores a consonant or a vowel. Vowel letters are a/A, e/E, i/I, o/O, u/U. Consonant are all other letters. When a consonant is found print the character. When a vowel is found print “upper case vowel” or “lower case vowel” depending on the case of the vowel. (2 points of this exercise will be assessed for providing an **efficient** answer, you **don't** need to list all letters in the alphabet in your case statements).

Sample outputs for a couple values:

<table>
<thead>
<tr>
<th>char consonant value</th>
<th>Console output</th>
</tr>
</thead>
<tbody>
<tr>
<td>'b'</td>
<td>b</td>
</tr>
<tr>
<td>'C'</td>
<td>C</td>
</tr>
<tr>
<td>'a'</td>
<td>lower case vowel</td>
</tr>
<tr>
<td>'A'</td>
<td>upper case vowel</td>
</tr>
</tbody>
</table>

```c
switch(consonant) {
    case 'a':
    case 'e':
    case 'i':
    case 'o':
    case 'u':
        printf("lower case vowel\n");
        break;
    case 'A':
    case 'E':
    case 'I':
    case 'O':
    case 'U':
        printf("upper case vowel\n");
        break;
    default:
        printf("%c", consonant);
}
```