Name:_____ Student #:_____ Section:___.

IPC144 Quiz4 – Version A (Solution)

[10 marks]

Multiple Choice: Only **one** correct answer for each question:

1. Walkthrough. What is the output (printed to the screen) of the following code? Show your rough work. **[4 marks]**

```
// QuizStructure.h
struct QuizStructure
{    int num;
     char letter;
     double dub;
};
// q4_struct.c
#include <stdio.h>
#include "QuizStructure.h"
#define SIZE 4
int main(void)
{    struct QuizStructure MyQuiz[SIZE];
     int i;
     for (i = 0; i < 3; i++)
     {       MyQuiz[i].num = i;
             MyQuiz[i].letter = ('f' + i); //'f' + 1 == 'g', 'f' + 2 == 'h'
             MyQuiz[i].dub = ((double)i + 2.5);
     }
     for (i = 0; i < 3; i++)
     {printf("num: %d, letter: %c, dub: %.1f\n", MyQuiz[i].num, MyQuiz[i].letter, MyQuiz[i].dub);}
     printf("===\n");
     struct QuizStructure tempOne = { 72, 'w', 34.7 };
     struct QuizStructure tempTwo = MyQuiz[0];
     MyQuiz[0] = tempOne;
     MyQuiz[3] = tempTwo;
     for (i = 0; i < 4; i++)
     {printf("num: %d, letter: %c, dub: %.1f\n", MyQuiz[i].num, MyQuiz[i].letter, MyQuiz[i].dub);}
     return 0;
}
```

```
Output:
num: 0, letter: f, dub: 2.5
num: 1, letter: g, dub: 3.5
num: 2, letter: h, dub: 4.5
===
num: 72, letter: w, dub: 34.7
num: 1, letter: g, dub: 3.5
num: 2, letter: h, dub: 4.5
num: 0, letter: f, dub: 2.5
```

Name:_____ Student #: _____ Section:___.

2. Fill in the blanks with missing code, referring to the comments. **[6 marks]**

```
//q4_array.c
#include<stdio.h>

#define SIZE 5

int main(void)
{
    int i;
    int multiplier = 2;

    //declare an int array named myArray that holds SIZE numbers
    int myArray[SIZE];

            //define a loop that iterates SIZE times beginning at 0
            for (i=0; i<SIZE; i++)
            {
                    /* populate the array with values derived by multiplying
                    the iterator (i) by multiplier
                    then increment multiplier by 1 */
                    myArray[i] = i * multiplier;
                    multiplier++;

                   // separate scenario: user inputs values to fill the array
                    // printf(Enter a num:");
                      scanf("%d", &myArray[i]);
                       myArray[i] += 10;
                     // int x;
                    //scanf("%d",&x);
                    //x +=10; // x = x+10;
                    //float y =10.9;
                    //x = (int)y +100;
            }

    //define a loop that prints out the values in myArray in reverse order
    //display only the values in position/index 4,2,0
    for (i=SIZE-1; i>=0; i=i-2)
    //for (i=SIZE; i>0; i--)
    for (i = SIZE-1; i>=0; i--)
    {
            printf("%d", myArray[i-1]);
            printf("\n");
    }
    return 0;
}
```

Output:

```
24
15
8
3
0
```