

Question One

Find the bug in the following code so that it runs correctly

Answer:

```
#include <stdio.h>
```

```
int x = 1;
```

```
main(){
```

```
    if(x==1)
```

```
        printf ("x equals 1");
```

```
    else
```

```
        printf ("x does not equal 1");
```

```
    return 0;
```

```
}
```

Question Two

Write a header file for a function `do_it()` that takes three type `char` arguments and returns a type `float` to the calling program

Answer: (do_it.h)

```
#ifndef DO_IT_H
```

```
#define DO_IT_H
```

```
float do_it(char a, char b, char c);
```

```
#endif // DO_IT_H
```

Write a header file for a function `print_a_number()` that takes a single type `int` argument and returns a type `float` to the calling program

Answer: (`print_a_number.h`)

```
#ifndef PRINT_A_NUMBER_H
#define PRINT_A_NUMBER_H
```

```
void print_a_number(int x);
```

```
#endif // PRINT_A_NUMBER_H
```

What's wrong with the following program

Answer:

The `print_msg()` function is not supposed to take any arguments but the main function calls it with a string argument.

Question Three

Write a declaration for an array that will hold 50 type `long` values

Answer:

```
long values[50];
```

Show a statement that assigns the value 123,456 to the 50th element in the array from the above equation

Answer:

```
_long values[49] = 123456;
```

What is the value of x when the following statement is complete

Answer:

x is equal to 100 when the statement is complete

What is the value of ctr when the following statement is complete

Answer:

The value of ctr is 11 when the statement is complete

Write a while statement to count from 1 to 100 by 3s

Answer

```
#include <stdio.h>
```

```
main(){
```

```
    int count = 1;
```

```
    while(count <= 100){
```

```
        printf("%d ", count);
```

```
        count += 3;
```

```
    }
```

```
}
```

What is wrong with the following code fragment (MAXVALUES is not the problem !)

Answer:

The code under the for loop is always executed once, outside of the for loop, because of the semicolon terminating the for loop.

Question Four

Write a function named addarrays() that accepts two arrays that are of the same size. The function should add each element in the arrays together and place them in a third array

Answer:

```
void addarrays(int array1[], int array2[], int destination_array[], int SIZE){  
  
    for(int i=0;i<SIZE;i++){  
        destination_array[i] = array1[i] + array2[i];  
    }  
}
```

Modify the function you created in to return a pointer to the array containing the totals. Place this function in a program that also displays the values in all three arrays

Answer:

```
#include <stdio.h>
```

```
int *addarrays(int array1[], int array2[], int SIZE);
```

```
main(){
    int array1[] = {2,5,3,22,6};
    int array2[] = {13,143,11,10,121};

    int *array3 = addarrays(array1, array2, 5);
    for(int i=0;i<5;i++) {
        printf("%d \n", array3[i]);
    }
}
```

```
int *addarrays(int array1[], int array2[], int length){
    int *destination_array = malloc(length * sizeof(int));
    for(int i=0;i<length;i++){
        destination_array[i] = array1[i] + array2[i];
    }
    return destination_array;
}
```