

CS 121 – Week 4 Worksheet – Functions, Functions, & More Functions!

1. What is the output of the following code? (The code below is on the website, “ws4-main.cpp”)

```
#include <iostream>

using std::cout;

// function prototypes (definitions are below main)

int    getSum(int a, int b);           // two variables passed by value
double squareOf(double x);           // one variable passed by value
void   setDoubleToFive(double& var);  // one variable passed by reference
int    factorialOf(int n);            // one variable passed by value
char   getUpperCaseLetter(char& ch);  // one variable passed by reference

int main()
{
    int int_one = 5, int_two = 8, int_three = 99;
    double dbl_one = 12.0, dbl_two = 3.0, dbl_three = -4.0;
    char char_one = 'b', char_two = 'y';

    // first set of function calls
    int_three = getSum(int_one, int_two);
    dbl_two = squareOf(dbl_one);
    setDoubleToFive(dbl_three);

    // first set of outputs
    cout << int_one << " " << int_two << " " << int_three << "\n";
    cout << dbl_one << " " << dbl_two << " " << dbl_three << "\n";
    cout << char_one << " " << char_two << "\n";

    // second set of function calls
    int_one = factorialOf(5);
    char_two = getUpperCaseLetter(char_one);

    // second set of outputs
    cout << int_one << " " << int_two << " " << int_three << "\n";
    cout << dbl_one << " " << dbl_two << " " << dbl_three << "\n";
    cout << char_one << " " << char_two << "\n";

    return 0;
}

int getSum(int a, int b)
{
    return (a+b);
}

double squareOf(double x)
{
    return (x*x);
}

void setDoubleToFive(double& var)
{
    var = 5 + 5 - 5;
}
```

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