

## Programming Concepts C++ CSCI 261

### Exam 2 Review Part 1

## 1. True or False

- void functions return a value.
- Function prototypes do not require parameter names.
- Pass by reference will send the address of the variable, not the value of the variable.

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## 2. What is printed?

```
void myFunc( int &x, int y ) {
    x = 52;
    y = 7;
}

int main() {
    int x = 0;
    int y = 0;
    myFunc( x, y );
    cout << "x = " << x << endl;
    cout << "y = " << y << endl;
    return 0;
}
```

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## 3. What is printed?

```
int myFunction( double &a, double &b, double c ) {
    a = 2 * b;
    b = 15 + c;
    c = 3 * a;
    return (a + b + c);
}

int main() {
    double a = 1;
    double b = 2;
    double c = 3;
    myFunction( a, b, c );
    cout << "a = " << a << " b = " << b << " c = " << c << endl;
    return 0;
}
```

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## 4. What is printed?

```
int myFunction( double &a, double &b, double c ) {
    a = 2 * b;
    b = 15 + c;
    c = 3 * a;
    return (a + b + c);
}

int main() {
    double a = 1;
    double b = 2;
    double c = 3;
    double d = myFunction( a, b, c );
    cout << "d = " << d << endl;
    return 0;
}
```

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## 5. Which are legal statements?

```
void funcA( int x, int y, int z );
int funcB( int x, double y );

a) cout << funcA( 5, 4, 3 ) << endl;
b) cout << funcB( 5, 4.0 ) << endl;
c) funcA( 5, 4 );
d) funcA( 5, 4.7, 3 );
e) int x = funcB( 5, 6 );
f) int y = funcA( 5, 4, 3 );
```

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## 6. Write Function Prototypes

- Write a function prototype with the name "coolFunc" that has no parameters and does not return a value.
- Write a function prototype with the name "hotFunc" that has no parameters and returns a double.
- Write a function prototype with the name "neutralFunc" that returns an integer and whose parameters in order are an integer named foo, a double named bar, and a character named baz.

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## 7. Write a Function

- Write a function that calculates and returns the area of a square for whole numbers.

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## 8. Find the errors

```
#include <iostream>
using namespace std;

int main() {
    short 7;
    addOne( x );
    cout >> "7 plus one is " << x << endl;
    return 0;
}

void addOne( int x ) {
    x++;
}
```

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## 9. Find the errors

```
#include <iostream>
using namespace std;

int main() {
    fout fstream;
    double x(2.0), y(2.5);
    if( x > y )
        fout >> "x is greater than y" << endl;
    else
        fout << "x is less than/equal to y" >> endl;
    return 0;
}
```

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## 10. Write code

- a) Write a snippet of code that
  - i. declares and opens the file "FileIn.txt" for an input stream named "myInput"
  - ii. Checks to be sure the open occurred and if not exits the program
- b) Suppose FileIn.txt contains 3 integers. Write code to read in these three integers from the input stream and outputs the sum to the terminal

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## 11. Write Code

- Write a function that accepts an integer array of any size and returns the sum of the array. Do not allow the function to modify the array.

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## 12. Write code

- Write a function that has no return and accepts a string as input and appends to the end of the string " is a super coder."

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## 13. What's the output?

```
int someFunc( int a, int b ) {
    if( a < b )
        return a + someFunc( b, a );
    else
        return b + someFunc( a - 1, b );
}

int main() {
    cout << someFunc( 2, 3 ) << endl;
    return 0;
}
```

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## 14. What's the output?

```
int someFunc( int a, int b ) {
    if( a < 0 && b < 0 )
        return 0;
    else if( a < b )
        return a + someFunc( b, a - 1 );
    else
        return b + someFunc( a - 1, b );
}

int main() {
    cout << someFunc( 2, 3 ) << endl;
    return 0;
}
```

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