Name: _____
Score: _____ / _____

Quiz 6

Part 1

Will the following code result in a segmentation fault?

```
int main() {
        int x = 10;
        int *y = &x;
        cout <<*y <<endl;
        return 0;
}
```

- A. Yes
- B. No

Answer Point Value: 10.0 points
Answer Key: B

Will the following code result in a segmentation fault?

```
int main() {
        int x = 10;
        int *y = &x;
        y += 1000000     // one million
        cout <<*y <<endl;
        return 0;
}
```

- A. Yes
- B. No

Answer Point Value: 10.0 points
Answer Key: A

Take a look at the source code below.

```
void function1(int x)
    x = x + 1;


void function2(int &x)
    x = x + 1;


int main()
    int num1 = 0;  // num1 = 0
    int *num2 = &num1;  // num2 = num1 = 0, and *num2 = address of num1
    cout <<num1 <<endl;  // print num1
    function1(num1);  // call function1 with input = 0
    cout <<num1 <<endl;  // print num1
    function2(*num2);  // call function2 with input = address of num1
    cout <<num1 <<endl;  // print num1
    return 0;
```

function1 uses a parameter that's passed by (value / reference) ____, whereas **function2** uses a parameter that's passed by (value / reference) ____. We can tell the difference because parameters that are passed by (value / reference) ____ have an ampersand, &, attached to the name of the parameter.

The value **num1** gets printed three times. It is initially set to (what value?) ____. The first time it gets printed, it is equal to (what value?) ____. Then, function1 gets called, and then it gets printed and is equal to (what value?) ____. Then, function2 gets called, and then it gets printed and is equal to (what value?) ____.

It is important to note that the value of **num1** changes when we call (function1 / function2) ____ because that function uses a parameter that is passed by reference, which means the value will change globally (this means that it will physically change in memory).

Answer Point Value: 80.0 points
Answer Key: value, reference, reference, zero|0, zero|0, zero|0, one|1, function2