Quiz C **SOLUTIONS**

1) What does += do? **x = x +**

2) What does /= do? **x = x /**

3) What does this initializer do? `int scores[12];`
Creates an integer array called scores with 12 values.

4) What does this initializer do? `int buckets[] = {0, 1, 2, 3, 4};`
Creates an integer array called buckets with 5 values containing the values 0 through 4.

5) and this do? `int arr[3][3] = { {0, 3, 6}, {1, 4, 7}, {2, 5, 8} };`
Creates a two dimensional array that's 3 x 3 with the values 0, 3, 6 at the "left", 1, 4, 7, at the "middle" and 2, 5, 8 at the "right."

6) Given question 5) what would be printed by this?

```
cout << arr[1][1] << endl;
```
4

and this? `cout << arr[2][1] << endl;` **5**

and this? `cout << arr[1][0] << endl;` **1**

7) What does this initializer do? `int arr[3][3][3];`
Creates a three dimensional array ("cube") that's 3 x 3 x 3.

8) Given this function `foo()`

```
int foo(int x = 4, int y = 4, int z = 4, int w = 4)
{
      return (x + y + z + w);
}
```

What will this `cout` print? **11**

```
cout << foo(1, 2) << endl;
```

9) Given these three `print()` functions.

```
void print(int i) {
     cout << "A: " << i << endl;
}
void print(float  f) {
     cout << "B: " << f << endl;
}
void print(char c) {
     cout << "C: " << c << endl;
}
```

What will print when this is called, **B: 8.88**

```
float fData = 8.88;
print(fData);
```

10) Given this `enum`

```
enum Season {Fall, Winter, Spring, Summer};
```

What will print when this is called? Remember, enumerated values are integer constants in disguise. The first in the list is 0, the next 1, and so on.

```
Season season = Winter;
cout << season << endl;
```

1

For 11), 12), and 13), when given this `string`

```
string str= "We are the world.";
```

11) What will print when this is called, **world**

```
string str2 = str.substr(11, 5);
cout << str2 << endl;
```

12) What will print when this is called, **3**

```
long pos = str.find("are");
cout << pos << endl;
```

13) Now, given `pos` from 12) what will print when this is called, **We were the world.**

```
str = str.replace(pos, 3, "were");
cout << str << endl;
```

14) What does this function do? **Random number between num1 and num2**

```
int foobar(int num1, int num2)
{
    int num3 = num2 - num1 + 1;
    return rand()%num3 + num1;
}
```

15) Correct the program below so that `main()` has access to, and can print, `RATE` without the compiler saying "`Use of undeclared identifier 'RATE'`"

```
#include <iostream>

using namespace std;

namespace globalType
{
    const int N = 10;
    const double RATE = 7.5;
    void printResult();
}
using namespace globalType;
int main()
{
    cout << "RATE:" <<  globalType::RATE  << endl;
    return 0;
}
```

16) Why is the use of a random seed such as `srand((uint)time(NULL));` so important?

Seeds randomizer according to time. Otherwise you will always get the same random numbers.

17) Where in your program would you typically use such a random seed?

Right after main(). Only once.

18) What does this function do? **returns true if list1 == list2**

```
bool foo(int list1[], int list2[], int size)
{
    for (int i = 0; i < size; ++i)
    {
        if (list1[i] != list2[i])
        {
            return false;
        }
    }
    return true;
}
```

19) What does this function do? **finds index of value in list[]**

```
int bar(int list[], int size, int value)
{
    for (int i = 0; i < size; ++i)
    {
        if (list[i] == value)
        {
            return i;
        }
    }
    return -1;
}
```

20) What does this function do? **swaps thing1 with thing2**

```
void foobar(int& thing1, int& thing2)
{
    int bucket;
    bucket = thing1;
    thing1 = thing2;
    thing2 = bucket;
}
```