NetID: hxie13 QuizID: 56723 Score: 1 / 4 Answer Source: PrairieLearn

1. Which of the following is true about dynamic arrays in C++?

A. Values are always automatically initialized to a default value when you create an array regardless of its type.
B. Arrays can only be made on the stack.
C. More than one of the other options are true.
D. They have a `length` member variable associated with them.
E. [Correct Answer] [Your Answer] They are stored contiguously in memory.

2. Consider this simple code, and assume the `puppy` class has default and copy constructors defined:

```
puppy * plantANew(puppy orig) {
    puppy * seedling = new puppy(orig);
    return seedling;
}

int main() {
    puppy f1; puppy * f2;
    f2 = plantANew(f1);
    return 0;
}
```

How many times is a `puppy` constructor called in the example above?

A. Never, but the code executes with no errors.
B. Never, because this code has a compiler error.
C. One time.
D. [Your Answer] Twice.
E. [Correct Answer] Three times.

3. Consider the following code:

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

void myfunc(int y, int *x) {
    y = y+1;
    cout << *x << endl;
    y = y+1;
    *x = y;
}

int main() {
    int z = 6;
    int *x = &z;
    myfunc(z, x);
    myfunc(z+1, x);
    return 1;
}
```

What is the result of compiling and running this code?

A. Nothing is printed to the screen.
B. The numbers 6 and 9 are printed to the screen.
C. The numbers 7 and 10 are printed to the screen.
D. [Your Answer] This code has a compilation error.
E. [Correct Answer] The numbers 6 and 8 are printed to the screen.

4. Consider this simple function definition.

```
int & ugly(int x) {
    return x;
}
```

Which of the following statements is true?

A. This function is ugly because the value of `x` cannot be changed.
B. This function is ugly because there is a type mismatch between the return value and the return type.
C. [Your Answer] This function is not ugly at all, despite its name.
D. This function is ugly because the parameter is not `int const x`.
E. [Correct Answer] This function is ugly because it returns a value parameter by reference.