[redacted] [redacted] [redacted] [redacted]

1. Suppose you have the following code:

```
class Coffee{
  public:
    bool awesome;
    void setSugar();
  private:
    int oz;
    bool sugar;
};

void Coffee::setSugar() { // code code code }

void serveCoffee() { // code code code }

int main() {
    Coffee c;
    return 0;
}
```

Where could the assignment `awesome = true;` occur?

A. Only in the constructor for the class, if we were to write one.
B. In the `serveCoffee` function.
C. None of the other options is correct.
D. In another file that does not include a declaration of the class `Coffee`.
E. [Correct Answer] [Your Answer] In the `main` function if we made it `c.awesome = true;`.

2. What is one way that C++ enforces `encapsulation`?

A. C++ employs inheritance.
B. By convention, the main function is put in a separate file.
C. [Correct Answer] [Your Answer] Creating private member variables and public functions to alter the variables in a controlled manner.
D. Compilation is orchestrated via a Makefile.
E. By using pointers, rather than the objects themselves.

3. What is the error in the following code?

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

class LegoMovie{
  public:
    bool getEverythingIsAwesome();
    void setEverythingIsAwesome(bool b);
  private:
    bool everythingIsAwesome;
};

int main() {
    LegoMovie movie;
    movie.setEverythingIsAwesome(true);
    return 0;
}
```

A. None of the other answers is true of this code.
B. The `main` method does not call the `LegoMovie`'s member functions correctly.
C. The `LegoMovie` class is missing a constructor.
D. The `LegoMovie` class is missing a destructor.
E. [Correct Answer] [Your Answer] There is no implementation for `LegoMovie`'s member functions.

4. Consider the following code:

```
int main() {
    int *q;
    q = new int;
    *q = 6;
    delete q;
    return 0;
}
```

Suppose that variable `q` has memory address `0xdeadbeef` and the memory address of the `new int` is `0xcafebabe`.

What is the value of `q` just before we call `delete` in the code above?

A. [Correct Answer] [Your Answer] `0xcafebabe`
B. None of these.
C. `6`
D. `0`
E. `0xdeadbeef`

```
class Foo {
   public:
      Foo(int init);
   private:
      int bar;
};

Foo::Foo(int init) { bar = init; }

int main() {
    Foo *x = new Foo();
    Foo *y = new Foo(12);
    return 1;
}
```

5. What is the result when this code is compiled and run?

A. [Correct Answer] A compiler error, because the proper constructor doesn't exist for the assignment to `x`.
B. A compiler error, because `y` is a pointer.
C. [Your Answer] No error, and no output.
D. A compiler error, because `bar` is private.
E. A runtime error, because the proper constructor doesn't exist for the assignment to `x`.