CSE 143 Quiz 5, May Day, 2001 Name _____

Here are two simple class definitions. To save space, the method bodies for the first class are written in the class declaration, and public and private are not placed on separate lines.

```
class B {
public:  B(int x) { it = x; }
         virtual void print() { cout << it; }
private: int it;
};

class D: public B {
public:  D(int x, int y);
         virtual void print();
private: int that;
};
```

1. Give an implementation of the constructor for class D. It should set it=x and that=y.

```
// construct new D with it = x and that = y.
D::D(int x, int y) : B(x) { that = y; }
```

or

```
// construct new D with it = x and that = y.
D::D(int x, int y) : B(x), that(y) {  }
```

2. Give an implementation of method D::print that prints the current values of it and that to cout.

```
// print it and that
void D::print( ) {
     B::print( );
     cout << that;
}
```

3. Suppose we create two objects:

```
B * bptr = new B(1);
D * dptr = new D(2,3);
```

For each of the following statements, explain what happens. If something is wrong with the statement, explain the problem.

`bptr->print( );` **Prints 1**

`dptr->print( );` **Prints 2 3**

`bptr = new D(17,42); bptr->print();` **Prints 17 42**

`dptr = new B(143); dptr->print();` **Illegal. A pointer of type dptr can only refer to instances of D or one of its subclasses.**