

**CS 12 - Quiz 5**  
**March 12, 1997**

1. State whether the following sets of functions are legal or illegal.

(a) (3 pts)

```
void func(int i);  
void func(int x);
```

(b) (3 pts)

```
void func2(int i, double a, char c);  
int func2(int i, double a, char c);
```

(c) (3 pts)

```
void func3(int x, double y);  
void func3(double y, int x);
```

2. (15 pts) Overload the << operator to display the following class. Show any necessary changes to the class.

```
class shape  
{  
    private:  
        int num_sides;  
        char color[10];  
  
};
```

3. (16 pts) Write a recursive function that prints a non-negative integer with commas in the appropriate places. For example, if passed the integer 12178, it should print "12,178". (Hint: use / and %)

4. (10 pts) Describe the difference between a virtual function and a normal C++ function. Give a reason why virtual functions are useful.