Problem 1: What is the output?

```
#include <iostream>
using namespace std;
int main() {
    //1
    int x = 5;
    int* z;
    z = &x;
    cout << "*z is : "<< *z << endl;
    //2
    *z = 3;
    cout << "x is : " << x << endl;
    //3
    int& a = x;
    a = 4;
    cout << "x is: " << x << endl;
    cout << "*z is: "<< *z << endl;
}
```

Problem 2: What is the output?

```
#include <iostream>
using namespace std;
void swap(int a, int b)
{
    int c = a;
    a = b;
    b = c;
}

int main() {
    int x = 3;
    int y = 5;
    swap(x, y);
    cout << "x is : " << x << endl;
    cout << "y is : " << y << endl;
}// How to swap x and y?
```

Problem 3: What is the output?

```
#include <iostream>
using namespace std;
void swap2(int* a, int* b)
{
    int* c = a;
    a = b;
    b = c;
}
```

```
int main() {
    int x = 3;
    int y = 5;
    swap2(&x, &y);// Swap the value of x and y
    cout << "x is : " << x << endl;
    cout << "y is : " << y << endl;
    return 0;
}// How to swap x and y?
```

Problem 4: What is the output?

```
#include <iostream>
using namespace std;
class Double {
public:
    Double(double n):m_value(n){}
    Double getMyself() { return *this;}
    void setValue(double n){m_value = n;}
    double getValue(){return m_value;}
private:
    double m_value;
};

int main()
{
    Double d(10);
    d.getMyself().setValue(4);
    cout << d.getValue()<<endl;
}
```

Problem 5: What is the output?

```
#include <iostream>
using namespace std;
class A {
public:
    A() { cout << "C"; }
    ~A() { cout << "2"; }
};
class B {
public:
    B() { cout << "S"; }
    ~B() { cout << "3"; }
private:
    A a;
};

int main()
```

```
{
    B b;
    return 0;
}
```

Problem 6: What is the output?

```
#include <cstring>
#include <iostream>
using namespace std;
class student {
public:
    student(const char *name, const double &score) {
        m_name = new char[strlen(name)+1];
        strcpy(m_name, name);
        m_score = score; }
    ~student() { delete [] m_name; }
private:
    char* m_name;
    double m_score;
};
int main()
{
    student A("ABC",100);
    student B = A;
}
```

Extra: Add functions that are missing from this program.

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

class MyClass
{
public:
    void print(){cout << d_x << "," << d_y << "," << *d_z << endl;}
private:
    int d_x;
    int& d_y;
    int* d_z;
};

int main() {
    int b = 2;
    MyClass obj = MyClass(1, b, 3);
    obj.print();
    return 0;
}
```