

第1题

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/*阅读下面程序并回答问题*/
struct A {
    int i;
    int j;
    operator int() { return i + j; }
    A(int x, int y):i(x),j(y){}
} a = { 1,2 };

struct B :A {
    int m;
    int n;
    operator A() { return A(i, j); }
    operator int() { return A(*this) + m + n; }
    B(int x, int y, int m, int n) :A(x, y), m(m), n(n){}
} b = { a,a,3,4 };

void test() {
/*下面语句执行以后，i的值是多少？请说明详细计算过程*/
    int i = a + b;
    std::cout << "i = " << i << std::endl;
}
```

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i = 16
/*
A a = {1, 2}; → i = 1, j = 2
B b = {a, a, 3, 4}; → a被转换成int类型传入B的构造函数
                    → 调用A::operator int(), int(a) = 3
                    → x = y = 3
                    → B类中 A::i=3, A::j=3, B::m=3, B::n=4
int i = a + b; → a被转换成int类型,int(a) = 3
                → b被转换成int类型,调用B::operator int()
                → A(*this)调用B::operator A()返回匿名对象A(3,3)
                → 匿名对象被转换为int类型,int(A(3,3)) = 6
                → int(b) = 6 + 3 + 4 =13
                → i = 16
*/
```

第2题

```
/*阅读下面程序并回答问题*/
struct A {
    int x;
    static int y;
public:
```

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    operator int() { return x + y; }
    A& operator+=(const A& a);
    A operator++(int);
    A(int x = 1, int y = 1) :x(x) { A::y = y; }
};

int A::y = 20;
A& A::operator+=(const A& a) {
    x += a.x;
    y += a.y;
    return *this;
}
A A::operator++(int) {
    return A(x++, y++);
}

void test() {
    A a(2, 5), b(6), c;
/*下面每条语句执行完后，i的值是多少，对象a, b, c的内容分别是多少*/
    int i = b.y;
    i = a++;
    i = a + c;
    i = (b += c);
}

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int i = b.y;
// i=1;
// a.x=2; a.y=1;
// b.x=6; b.y=1;
// c.x=1; c.y=1;
i = a++;
// i=5;
// a.x=3; a.y=2;
// b.x=6; b.y=2;
// c.x=1; c.y=2;
i = a + c;
// i=8;
// a.x=3; a.y=2;
// b.x=6; b.y=2;
// c.x=1; c.y=2;
i = (b += c);
// i=11;
// a.x=3; a.y=4;
// b.x=7; b.y=4;
// c.x=1; c.y=4;

```

更正

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// 第二题
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i = 1, a(2,1),b(6,1),c(1,1)
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i = 3, a(3,1),b(6,1),c(1,1)
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```
i = 6, a(3,1),b(6,1),c(1,1)
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i = 9, a(3,2),b(7,2),c(1,2)
```