

# ТЕСТОВИ ЗАДАЧИ

доц., д-р. Нора Ангелова

# ЗАДАЧИ

*Дадена е програма на езика C++.*

*Напишете какво ще изведе програмата.*

```

class A {
    public:
        A(int a = 2) {
            n = a;
            x = a + 1;
            cout << "A: " << n << ", " << x << endl;
        }
        A(const A& p) {
            n = p.n + 1;
            x = p.x + 2;
            cout << "A.n: " << n << endl << "A.x: " << x << endl;
        }

        A& operator=(const A& p) {
            if (this!=&p) {
                n = p.n + 2;
                x = p.x + 3;
                cout << "A.n: " << n << endl << "A.x: " << x << endl;
            }
            return *this;
        }
        void print() const { cout << "A::x" << x << "A::n" << n << endl; }

    private:
        double x;
        int n;
};

```

```
class B {
public:
    B(double b = 3) {
        n = b+1;
        x = b;
        cout << "B: " << n << ", " << x << endl;
    }
    void print() const {
        cout << "B::x" << x << "B::n" << n << endl;
    }
private:
    double x;
    int n;
};
```

```
class C {
    public:
        C(double b = 4) {
            n = b+2;
            x = b+4;
            cout << "C: " << n << ", " << x << endl;
        }
        C(const C& p) {
            n = p.n + 3;
            x = p.x + 5;
            cout << "C.n: " << n << endl << "C.x: " << x << endl;
        }
        C& operator=(const C& p) {
            if (this != &p) {
                n = p.n+1;
                x = p.x+2;
                cout << "C.n: " << n << endl << "C.x: " << x << endl;
            }
            return *this;
        }
        void print() const {
            cout << "C::x" << x << "C::n" << n << endl;
        }
    private:
        int n;
        double x;
};
```

```
class D: public B, protected C, A {
public:
    D(int x=1, int y=1, int z=1) : A(x), B(y), C(z) {
        n = z;
        m = x+y;
        cout << "D: " << n << ", " << m << endl;
    }
    void print() const {
        B::print();
        A::print();
        C::print();
        cout << "D::n" << n << "D::m" << m << endl;
    }
private:
    int n, m;
};
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```



B: 2, 1

C: 3, 5

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1

C: 3, 5

A: 1, 2

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1

C: 3, 5

A: 1, 2

D: 1, 2

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1

C: 3, 5

A: 1, 2

D: 1, 2

B: 2, 1

C: 3, 5

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1

C: 3, 5

A: 1, 2

D: 1, 2

B: 2, 1

C: 3, 5

A: 2, 3

D: 1, 3

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2



```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10



```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4  
A.x: 6
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4  
A.x: 6  
C.n: 8
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4  
A.x: 6  
C.n: 8  
C.x: 11
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4  
A.x: 6  
C.n: 8  
C.x: 11  
A.n: 5
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4  
A.x: 6  
C.n: 8  
C.x: 11  
A.n: 5  
A.x: 7
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4  
A.x: 6  
C.n: 8  
C.x: 11  
A.n: 5  
A.x: 7  
C.n: 4
```



```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4  
A.x: 6  
C.n: 8  
C.x: 11  
A.n: 5  
A.x: 7  
C.n: 4  
C.x: 7
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4  
A.x: 6  
C.n: 8  
C.x: 11  
A.n: 5  
A.x: 7  
C.n: 4  
C.x: 7  
A.n: 4
```

```
int main() {  
    D x, y(2), z(1, 2), t(3, 4, 5);  
    D u = t;  
    x = t;  
    t = y;  
  
    return 0;  
}
```

```
B: 2, 1  
C: 3, 5  
A: 1, 2  
D: 1, 2  
B: 2, 1  
C: 3, 5  
A: 2, 3  
D: 1, 3  
B: 3, 2  
C: 3, 5  
A: 1, 2  
D: 1, 3  
B: 5, 4  
C: 7, 9  
A: 3, 4  
D: 5, 7  
C.n: 10  
C.x: 14  
A.n: 4  
A.x: 6  
C.n: 8  
C.x: 11  
A.n: 5  
A.x: 7  
C.n: 4  
C.x: 7  
A.n: 4  
A.x: 6
```

*Дадена е програма на езика C++.*

*Определете грешките в програмата и задраскайте съответните редове.*

*Напишете какво ще изведе програмата.*

*Определете статичното и динамичното свързване в програмата.*

```

class Base {
public:
Base() {
    cout << "Base()\n";
    f2();
}
~Base() {
    cout << "~Base()\n";
    f1();
}
void f() const {
    cout << "f()\n";
    f1();
    Base::f2();
    f3();
}
virtual void f1() const {
    cout << "Base::f1()\n";
}
protected:
virtual void f3() const {
    cout << "Base::f3()\n";
}
private:
virtual void f2() const {
    cout << "Base::f2()\n";
}
};

```

```

class Der1 : public Base {
public:
Der1() {
    cout << "Der1()\n";
    Base::f1();
    Base::f3();
}
void f2() const {
    cout << "Der1::f2()\n";
}
protected:
void f3() const {
    cout << "Der1::f3()\n";
}
private:
void f1() const {
    cout << "Der1::f1()\n";
}
};

class Der2 : public Der1 {
protected:
void f1() const {
    cout << "Der2::f1()\n";
}
public:
void f3() const {
    cout << "Der2::f3()\n";
}
private:
void f2() const {
    cout << "Der2::f2()\n";
}
};

```

```

int main() {
    Base b;
    Der1 d1;
    Der2 d2;
    Base *p = &d1;
    Der1 *q = &d2;
    p->f1();
p->f2();
p->f3();
q->f1();
    q->f2();
q->f3();
    p = &d2;
    p->f1();
p->f2();
p->f3();
    Der1 *r = new Der2;
r->f1();
    r->f2();
r->f3();
    p->f();
    q->f();
    r->f();
    delete r;
    return 0;
}

```

```

Base()
Base::f2()
Base()
Base::f2()
Der1()
Base::f1()
Base::f3()
Base()
Base::f2()
Der1()
Base::f1()
Base::f3()
Der1::f1()
Der2::f2()
Der2::f1()
Base()
Base::f2()
Der1()
Base::f1()
Base::f3()
Der2::f2()
f()
Der2::f1()
Base::f2()
Der2::f3()
f()
Der2::f1()
Base::f2()
Der2::f3()
f()
Der2::f1()
Base::f2()
Der2::f3()
~Base()
Base::f1()
...

```

КРАЙ