Object Oriented Programming (OOP)
Instructor: Mohammad AL-Qudah

Quiz#: 4
Date:

Name Gunay Rustamova

What are the **exact outputs** of the following program?

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

class Test
{
public:
	Test() {
		x = y = 0;
		cout << ++count << endl;
	}
	Test(int i) {
		x = y = i;
		cout << (count += 2) << endl;
	}
	Test(int x, int y) {
		this->x = x;
		this->y = y;
		cout << (count += 3) << endl;
	}
	void Print() {
		cout << x + y << endl << count << endl;
	}
	static int count;
private:
	int x, y;
};

int Test::count = 2;

void main()
{
	Test A(7), B(5, 10), C;
	A.Print();
	B.Print();
	B.count = 9;
	C.Print();
	Test D;
}
```

Output:

4

7

8

14

8

15

8

0

9

10

Object Oriented Programming (OOP)

Instructor: Mohammad AL-Qudah

Quiz#: 5

Date:

Name Gunay Rustamova

What are the exact outputs of the following program?

```
#include<iostream>
using namespace std;
class Point
{
      int x, y;
public:
      int *p;
      Point() { cout << "A" << endl;  x = y = 0;  p = new int; }

Point(const Point &o) { cout <<
      "B" << endl;x = o.x+1;
      y = o.y-1;
      p = new int;
      *p = ++(*(o.p));
      *(o.p) = *p + 2;
      }

      Point(int k){
      cout << "C" << endl;x = k;
      y = k + 2;
      p = new int;
      *p = x + y;
      }

      ~Point(){ cout << "D" << endl; delete p; }

      void print(){
      cout << *p << endl; cout <<
      x + y << endl;
      }
};

void  f1(Point  &obj)  {  obj.print();  }
void f2(Point *obj) { (*obj).print(); }
void  f3(Point  obj)  {  obj.print();   }
void main()
{
      Point p1(1);
      f3(p1);
      f1(p1);
      f2(&p1);
}
```

Outputs:

C

B

5

4

D

7

4

7

4

D

Object Oriented Programming (OOP)

Instructor: Mohammad AL-Qudah
Quiz # 6

Name Gunay Rustamova

What are the **Exact Outputs** of the following program?

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

class Point {
        static int x;int y;
public:
        Point() { x = y = 10; print(); }Point(int i) { x
        = y = i; }
        void print() { cout << "(" << x << "," << y << ")" << endl; }void moveRight(void) {
        x++; y++; }
        void moveLeft(void)   { --x;   --y; }
};
int Point::x = -1;

class Line {
        Point      a,      b;
public:
        Line() : b(3) { ; }
        void resize(void){ a.moveLeft(); b.moveRight(); }void shift(void) {
        a.moveLeft(); b.moveLeft();    } void draw()   { a.print();    b.print();
        }
};

void main() {
        Line obj;
        obj.resize();
        obj.draw();
        obj.shift();
        obj.draw();
}
```

Output:

(10,10)

(3,9)

(3,4)

(1,8)

(1,3)

Object Oriented Programming (OOP) Instructor: Mohammad AL-Qudah

Quiz#: 7
Date

Name: Gunay Rustamova

What are the exact outputs of the following program?

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

class A {
private:
	int x;
public:
	A(int i) { x = i + 1; cout << "CA" << endl; print();  }
	~A() { cout << "DA" << endl;  print();}
	void print(void){ cout << "A: x = " << x << endl; }
	void setX(int i) { x = i + 2; }
};

class B : public A {
private:
	int x;
	A a;
public:
	void setX(int i) { x = i + 5; }
	B(int i) : a(i+2), A(i * 2) {
		x = i;
		cout << "CB" << endl;
		a.print();
	}
	B() : A(1), a(2) {
		x = 0;
		cout << "CB" << endl;
		a.print();
	}
	~B() { cout << "DB" << endl; }
	void print(void) {    cout << "B: x = " << x << endl;  }
};

void main(void)
{
	B o1(5);
}
```

Output:

CA
A: x = 11
CA
A: x = 8
CB
A: x = 8
DB
DA
A: x = 8
DA
A: x = 11

Object Oriented Programming
(OOP)Instructor: Mohammad AL-Qudah

Quiz#: 8
Date:

Name Gunay Rustamova

What are the **exact outputs** of the following program?

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

class A{
protected:
	int x;
public:
	A(int i) { x = i; cout<<"CA"<<endl; }
	virtual ~A() { cout<<"DA"<<endl; }
	virtual void print(void)
	{
		cout << "A: x = " << x << endl;
	}
};

class B: public A{
private:
	int x;
public:
	B(int i): A(i+2) {
		x = i;
		cout<<"CB"<<endl;
	}
	~B() { cout<<"DB"<<endl; }
	void print(void)
	{
		cout << "B: x = " << x << endl;
	}
};

void fun1(A p)  {  p.print();  }
void fun2(A &p) {  p.print();  }

void main(void)
{
	A obj1(4);
	B obj2(5);
	fun2(obj1);
	fun1(obj2);
	fun2(obj2);
}
```

Output:

CA

CA

CB

A: x = 4

A: x = 7

DA

B: x = 5

DB

DA

DA

Object Oriented Programming (OOP) Quiz#: 9

Instructor: Mohammad AL-Qudah Date:

Name Gunay Rustamova

What are the exact outputs of the following program?

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

class A {
protected:
	int x;
public:

	A(int i=1) { x = i; cout << "CA \n"; m1(); }
	virtual ~A(){ cout << "DA \n";	}
	virtual void m1() { cout << x << endl; }
	virtual void pr1() { m1(); }
	void pr2() { m1(); }
	void pr3() { m1(); }
};

class B : public A {
protected:
	int x;
private:
	int* m_array;
public:
	B(int length): A(length-1)
		{ x = length;  m_array = new int[length]; m1(); }
	~B() { cout << "DB \n"; delete[] m_array; }
	virtual void m1() { cout << x << endl; }
	void pr1() { m1(); }
	virtual void pr2() { m1(); }
	void pr3() { m1(); }
};

int main()
{
	B *b =  new B(5) ;
	A *a = b;
	a->m1();
	a->pr1();
	a->pr2();
	a->pr3();
	delete a;

	return 0;
}
```

Output:

CA

4

5

5

5

5

5

DB

DA