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Output of C++ Program | Set 16

Predict the output of following C++ programs.

Question 1

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

class Base
{
public:
    int fun()      { cout << "Base::fun() called"; }
    int fun(int i) { cout << "Base::fun(int i) called"; }
};

class Derived: public Base
{
public:
    int fun(char x)   { cout << "Derived::fun(char ) called"; }
};

int main()
{
    Derived d;
    d.fun();
    return 0;
}
```

Output: Compiler Error.

In the above program, fun() of base class is not accessible in the derived class. If a derived class creates a member method with name same as one of the methods in base class, then all the base class methods with this name become hidden in derived class (See this for more details)

Question 2

```
#include<iostream>
```

```cpp
using namespace std;
class Base
{
    protected:
        int x;
    public:
        Base (int i){ x = i;}
};

class Derived : public Base
{
    public:
        Derived (int i):x(i) { }
        void print() { cout << x ; }
};

int main()
{
    Derived d(10);
    d.print();
}
```

Output: Compiler Error

In the above program, x is protected, so it is accessible in derived class. Derived class constructor tries to use initializer list to directly initialize x, which is not allowed even if x is accessible. The members of base class can only be initialized through a constructor call of base class. Following is the corrected program.

```cpp
#include<iostream>
using namespace std;
class Base {
    protected:
        int x;
    public:
        Base (int i){ x = i;}
};

class Derived : public Base {
    public:
        Derived (int i):Base(i) { }
        void print() { cout << x; }
};

int main()
{
    Derived d(10);
    d.print();
}
```

> 10

Output:

    10

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