Object Oriented Programming BS SE Fall 2017

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Quiz # 7

Q#1: Write down the output/errors of the given code segments. [5+5+5+5]=20 marks

```
#include <iostream>
#include <cmath>
using namespace std;
const float PI = 3.1415927;
class Container {
protected:
	float height;
	float width;
	float radius;
public:
	void set_volume(float h, float w, float r) {
		height = h;
		width = w;
		radius = r;
	}
};
class Sphere : public Container {
public:
	float volume() {
		float v = ((4 / 3) * PI * pow(radius, 3));
		return v;
	}

};
class Cylinder : public Container {
public:
	float volume() {
		float v = PI * pow(radius, 2) * height;
		return v;
	}
};
int main() {
	Sphere sphere;
	Cylinder cylinder;
	Container *ptrContainer1 = &sphere;
	Container *ptrContainer2 = &cylinder;
	ptrContainer1->set_volume(33.53, 25.11, 0);
	ptrContainer2->set_volume(13, 15, 0);
	cout << sphere.volume() << endl;
	cout << cylinder.volume() << endl;
}
```

```
#include <iostream>
using namespace std;
class A {
public:A() { cout << "A()" << endl; }
public:~A() { cout << "~A()" << endl; }
};
class B {
public:B() { cout << "B()" << endl; }
public:~B() { cout << "~B()" << endl; }
};
class C {
public:C() { cout << "C()" << endl; }
public:~C() { cout << "~C()" << endl; }
};
class D {
public:D() { cout << "D()" << endl; }
public:~D() { cout << "~D()" << endl; }
private: B obj1;
};
```

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```
class E {
public:E() { cout << "E()" << endl; }
public:~E() { cout << "~E()" << endl; }
private: A obj1;
};
class F {
public:F() { cout << "F()" << endl; }
public:~F() { cout << "~F()" << endl; }
};
class G {
public:G() { cout << "G()" << endl; }
public:~G() { cout << "~G()" << endl; }
private: C obj1;
private: D obj2;
};
class H {
public:H() { cout << "H()" << endl; }
public:~H() { cout << "~H()" << endl; }
private: E obj1;
private: F obj2;
};
class I {
public:I() { cout << "I()" << endl; }
public:~I() { cout << "~I()" << endl; }
private: H obj1;
private: G obj2;
};
void main()
{
	I temp;
}
```

```
#include<iostream>
using namespace std;
class A{
public:
	virtual void f(){
		cout << "A" << endl;}
};
class B : public A
{ };
class C : public B
{
public:
	void f(){
		B::f();
		cout << "C" << endl;}
};
class D : public C
{
public:
	void f(){
		C::f();
		cout << "D" << endl;}
};
int main()
{
	B * b = new D();
	b->f();
	return 0;
}
```

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```
#include <iostream>
using namespace std;
class Base {
	virtual void method() {
		cout << "from Base" << endl;
	}
public:
	virtual ~Base() { method(); }
	void baseMethod() { method(); }
};

class A : public Base {
	void method()
	{
		cout << "from A" << endl;
	}
public:
	~A() { method(); }
};
int main(void) {
	Base* base = new A;
	base->baseMethod();
	delete base;
	return 0;
}
```