```
class A
{
public:
      void f()          {cout<<"(1)"<<endl;}
      virtual void g()  {cout<<"(2)"<<endl;}
      virtual void h()  {cout<<"(3)"<<endl;}
      ~A()              {cout<<"(4)"<<endl;}
};
```

```
class B : public A
{
public:
      void f(int i)     {cout<<"(5)"<<endl;}
      void g()          {cout<<"(6)"<<endl;}
      void k()          {cout<<"(7)"<<endl;}
      virtual ~B()      {cout<<"(8)"<<endl;}
};
```

```
class C : public B
{
public:
      void h()    {g(); cout<<"(9)"<<endl;}
      virtual void f()  {cout<<"(10)"<<endl;}
      virtual void k()  {cout<<"(11)"<<endl;}
      ~C()              {cout<<"(12)"<<endl;}
};
```

```
int main()
{
      //-----------------------
      // pointers to 3 objects:
      A* ptr_A = new A;
      B* ptr_B = new B;
      C* ptr_C = new C;
      //-----------------------
      // Part 1:
      ptr_B->f(3);

      //-----------------------
      // Part 2:
      A* ptr_AtoB = ptr_B;
      ptr_AtoB->f();

      //-----------------------
      // Part 3:
      A* ptr_AtoC = ptr_C;
      ptr_AtoC->g();
      ptr_AtoC->h();

      //-----------------------
      // Part 4:
      B* ptr_BtoC = ptr_C;
      ptr_BtoC->k();

      //-----------------------
      // Part 5:
      delete ptr_A;
      delete ptr_AtoB;
      delete ptr_BtoC;

      return 0;
}
```