Inheritance Worksheet

1. Consider the following classes:

```
public class ABC {
        public void methodABC() {
            System.out.println(111);
        }

        public void methodABC(int i) {
            System.out.println(222);
        }
}
```

```
public class XYZ extends ABC {
        @Override
        public void methodABC(int i) {
            System.out.println(333);
        }

        @Override
        public void methodABC() {
            System.out.println(444);
        }
}
```

Assume the following declaration:

XYZ abc = new XYZ();

What is the output after executing the following code?

abc.methodABC(10);

abc.methodABC();

_____

_____

2. Consider the following classes:

```
public class First
{
  public void methodOne()
  {
     System.out.print("1");
  }

  public void methodTwo()
  {
     methodOne();
     System.out.print("2");
  }

}
```

```
public class Second extends First
{
  public void methodOne()
  {
     super.methodOne();
     System.out.print("A");
  }

  public void methodTwo()
  {
     super.methodTwo();
     System.out.print("B");
  }
}
```

```
public class Third extends Second
{
  public void methodOne()
  {
     System.out.print("X");
     super.methodOne();
  }

  public void methodTwo()
  {
     System.out.print("Y");
     super.methodTwo();
  }
}
```

Assume the following declarations:

First f1 = new First();
Second f2 = new Second();
Third f3 = new Third();

What is the output of the following code?

1. `f1.methodOne();` _____
2. `f1.methodTwo();` _____
3. `f2.methodOne();` _____
4. `f2.methodTwo();` _____
5. `f3.methodOne();` _____
6. `f3.methodTwo();` _____

3. Consider the following classes:

```
public class X {
        public int method(boolean i) {
                return 100;
        }
}
```

```
public class Y extends X {
        public double method(double d) {
                return d /= d;
        }
}
```

```
public class Z extends Y {
        public double method(int f) {
                return f += f;
        }
}
```

Assume the following declaration:

Z z = new Z();

What is the output of the following code?

z.method(21.12)); _____

Consider the following classes:

```
public class A {
        public A(int i) {
            System.out.println(myMethod(i));
        }

        public int myMethod(int i) {
            return (i + (i + 1)) - 0;
        }
}
```

```
public class B extends A {
        public B(int i, int j) {
            super(i * j);
            System.out.println(myMethod(i, j));
        }

        public int myMethod(int i, int j) {
            return super.myMethod(i * j);
        }
}
```

Assume the following declaration:

B b = new B(12, 2);

What is the output? _____