```
1)
public class integerclass
{
    private int val;

    public int getVal() {
        return val;
    }
    public boolean iseven(int x)
    {
        if(x%2==0)
            return true;
        else
            return false
    }
    public boolean iseven()
    {
        if(val%2!=0)
            return true;
        else
            return false
    }
    public boolean isodd()
    {
        if(val%2==0)
            return true;
        else
            return false
    }
    public static boolean isprime()
    {
        for(int i=2;i<x/2;i++)
        {
            if (val%i==0)
                return false;
            else
                return true;
        }
    public static boolean iseven(int x)
    {
        if(x%2!=0)
            return true;
        else
            return false
    }
    public static boolean isodd(int x)
    {
        if(x%2==0)
            return true;
        else
            return false
    }
    public boolean isprime(int x)
    {
       for(int i=2;i<x/2;i++)
       {
           if (x%i==0)
```

```
                return false;
            else
                return true;
        }
    }
        public static boolean isprime()
        {
            for(int i=2;i<x/2;i++)
            {
                if (val%i==0)
                    return false;
                else
                    return true;
            }
            public static boolean iseven(intgerclass x)
            {
                if(x.val%2!=0)
                    return true;
                else
                    return false
            }
            public static boolean isodd(intgerclass x)
            {
                if(x.val%2==0)
                    return true;
                else
                    return false
            }
            public static boolean isprime(intgerclass x)
            {
                for(int i=2;i<x.val/2;i++)
                {
                    if (x.val%i==0)
                        return false;
                    else
                        return true;
                }
            }
}
```

6. What is the output of running the class C in (a)? What problem arises in compiling the program in (b)?

```java
class A {
  public A() {
    System.out.println(
      "A's no-arg constructor is invoked");
  }
}

class B extends A {
}

public class C {
  public static void main(String[] args) {
    B b = new B();
  }
}
```

(a)

```java
class A {
  public A(int x) {
  }
}

class B extends A {
  public B() {
  }
}

public class C {
  public static void main(String[] args) {
    B b = new B();
  }
}
```

(b)

a) A's no- arg constructor is invoked

7. Identify the problems in the following code:

```java
1  public class Circle {
2    private double radius;
3
4    public Circle(double radius) {
5      radius = radius;
6    }
7
8    public double getRadius() {
9      return radius;
10   }
11
12   public double getArea() {
13     return radius * radius * Math.PI;
14   }
15 }
16
17 class B extends Circle {
18   private double length;
19
20   B(double radius, double length) {
21     Circle(radius);
22     length = length;
23   }
24
25   @Override
26   public double getArea() {
27     return getArea() * length;
28   }
29 }
```

public b (double radius , double length){

this . length = length

8. If a method in a subclass has the same signature as a method in its superclass with the same return type, is the method overridden or overloaded?

9. If a method in a subclass has the same signature as a method in its superclass with a different return type, will this be a problem?

8) overridden

9) yes