

A) 1.Constructor Overloading:

```
class Rectangle
{
    private int l,b;
    public Rectangle()
    {
        l=b=10;
    }
    public Rectangle(int x)
    {
        l=b=x;
    }
    public Rectangle(int x,int y)
    {
        l=x;
        b=y;
    }
    public void display()
    {
        System.out.println("Area = "+l*b);
    }
}

class Main {
    public static void main(String[] args) {
        Rectangle r1=new Rectangle();
        Rectangle r2=new Rectangle(5);
        Rectangle r3=new Rectangle(3,3);
        r1.display();
        r2.display();
        r3.display();
    }
}
```

A) 2.Method Overloading

```
class Area
{
    private float x,y,z;
    public float Area(float r)
    {
        return(3.14f*r*r);
    }
    public float Area(float l,float b)
    {

```

```

        return(l*b);
    }
    public float Area(float a,float b,float c)
    {
        float s;
        s=(a+b+c)/2;
        s=s*(s-a)*(s-b)*(s-c);
        return(float)(Math.sqrt(s));
    }
}

class Main {
    public static void main(String args[]) {
        Area a=new Area();
        System.out.println("Area of circle is: "+a.Area(10));
        System.out.println("Area of circle is: "+a.Area(10,10));
        System.out.println("Area of circle is: "+a.Area(10,10,10));
    }
}

```

A) 3.Static Method

```

import java.io.*;

public class GFG {
    static int a = 40;
    int b = 50;

    void simpleDisplay()
    {
        System.out.println(a);
        System.out.println(b);
    }

    static void staticDisplay()
    {
        System.out.println(a);
    }
}

class Main {
    public static void main(String[] args)
    {
        GFG obj = new GFG();
        obj.simpleDisplay();
    }
}

```

```
        obj.staticDisplay();
    }
}
```

B) Inheritance and Method Overriding

```
class Grandpa {
    public void show()
    {
        System.out.println("Inside show() method of Grandpa class");
    }
}
```

```
class Dad extends Grandpa {
    @Override public void show()
    {
        System.out.println("Inside show() method of Dad class");
    }
}
```

```
class Me extends Dad {
    @Override public void show()
    {
        System.out.println("Inside show() method of Me class");
    }
}
```

```
public class Main {
    public static void main(String[] args)
    {
        Grandpa grandpa = new Grandpa();

        Grandpa dad = new Dad();

        Grandpa me = new Me();
        grandpa.show();
        dad.show();
        me.show();
    }
}
```