1. find the output of following code.

```
public class Calculator
 {
    int result;
    public void add(int num1, int num2) {
        result = num1 + num2;
    }
    public void subtract(int num1, int num2) {
        result = num1 - num2;
    }
    public int getResult() {
        return result;
    }
    public static void main(String[] args) {
        Calculator calculator = new Calculator();
        int num1 = 10;
        int num2 = 5;
        calculator.add(num1, num2);
     System.out.println("Addition result: " + calculator.getResult());
        calculator.subtract(num1, num2);
System.out.println("Subtraction result: " +   calculator.getResult());
    }
}
```

2. find the output of following code.

```
public class OutputQuestion
 {
    int x = 10;
    void modifyValue(int val) {
        x = val * 2;
    }
    int getValue() {
        return x;
    }
    public static void main(String[] args) {
        OutputQuestion obj1 = new OutputQuestion();
        OutputQuestion obj2 = obj1;
        OutputQuestion obj3 = new OutputQuestion();

        obj2.modifyValue(5);
        obj3.modifyValue(7);
```

```
        System.out.println("obj1 value: " + obj1.getValue());
        System.out.println("obj2 value: " + obj2.getValue());
        System.out.println("obj3 value: " + obj3.getValue());
    }
}
```

3. find the output of following code.

```
public class MyClass
 {
    private int x;
    public MyClass() {
        x = 5;
    }
    public void setX(int value) {
        x = value;
    }
    public int getX() {
        return x;
    }
    public void incrementX() {
        x++;
    }
    public void printX() {
        System.out.println("The value of x is: " + x);
    }
}
public class Main {
    public static void main(String[] args) {
        MyClass obj1 = new MyClass();
        MyClass obj2 = new MyClass();

        obj1.setX(10);
        obj2.incrementX();
        obj1.printX();
        obj2.printX();
    }
}
```

4.find the output of following code.

```
public class OutputQuestion
 {
    private int number;
    public OutputQuestion(int num)
    {
        number = num;
    }
    public int calculateSquare()
    {
        return number * number;
    }
    public int calculateCube() {
        return number * number * number;
    }
    public static void main(String[] args)
    {
        OutputQuestion obj = new OutputQuestion(5);
        int squareResult = obj.calculateSquare();
        int cubeResult = obj.calculateCube();
        System.out.println("Number: " + obj.number);
        System.out.println("Square: " + squareResult);
        System.out.println("Cube: " + cubeResult);
    }
}
```

5. find the output of following code.

```
public class VariableMethodQuestion {
    int x = 5;
    void modifyValue(int y)
    {
        x = x + y;
    }
    void printValue()
    {
        System.out.println("Value of x: " + x);
    }
    public static void main(String[] args) {
    VariableMethodQuestion obj = new VariableMethodQuestion();
```

```
        int a = 10;
        int b = 20;
        obj.modifyValue(a);
        obj.printValue();
        obj.modifyValue(b);
        obj.printValue();
    }
}
```

6. find the output of following code.

```
public class Rectangle
{
    int length;
    int width;
    public int calculateArea() {
        return length * width;
    }
        public void displayDetails()
       {
        System.out.println("Rectangle Length: " + length);
        System.out.println("Rectangle Width: " + width);
        System.out.println("Rectangle Area: " + calculateArea());
       }
     public static void main(String[] args)
      {
        Rectangle rectangle = new Rectangle();
        rectangle.length = 5;
        rectangle.width = 10;
        rectangle.displayDetails();
    }
}
```

7. find the output of following code.

```
public class VariableAndMethodExample {
    private static int num1 = 10;
    private int num2 = 5;
    public static void main(String[] args)
    {
       VariableAndMethodExample obj1 = new VariableAndMethodExample();
       VariableAndMethodExample obj2 = new VariableAndMethodExample();
```

```
        obj1.num1 = 20;
        obj1.num2 = 15;
        obj2.num2 = 30;
        int result1 = obj1.calculateSum();
        int result2 = obj2.calculateSum();
        System.out.println("Result 1: " + result1);
        System.out.println("Result 2: " + result2);
    }

    private int calculateSum()
    {
        return num1 + num2;
    }
}
```

8. find the output of following code.

```
public class OutputQuestion {
    int x = 10;
    int y = 5;
    public int addNumbers(int a, int b)
    {
        return a + b;
    }
    public int multiplyNumbers(int a, int b)
    {
        return a * b;
    }
    public static void main(String[] args)
    {
        OutputQuestion obj = new OutputQuestion();
        int result1 = obj.addNumbers(obj.x, obj.y);
        int result2 = obj.multiplyNumbers(obj.x, obj.y);
        int sum = obj.addNumbers(result1, result2);
        System.out.println("Sum of the results: " + sum);
    }
}
```

9. find the output of following code.

```
public class VariableMethodQuestion
{
    int num = 10;
    void modifyVariable(int value)
    {
        num = value;
    }
    void printVariable()
    {
        System.out.println("Value of num: " + num);
    }
       public static void main(String[] args) {
        VariableMethodQuestion obj1 = new VariableMethodQuestion();
        VariableMethodQuestion obj2 = new VariableMethodQuestion();
        obj1.modifyVariable(20);
        obj1.printVariable();
        obj2.printVariable();
    }
}
```

10. find the Result of following code.

```
public class A {
    public static void main(String[] args)
    {
        System.out.println('j' + 'a' + 'v' + 'a');
    }
}
```

a) java
b) Something else (Other than simple concatenation)

11. find the output of following code.

```
public class Demo{
     public static void main(String[] arr){

     }
     public static void main(String arr){

     }
}
```

- a) Nothing
- b) Error

12. find the output of following code.

```
class Test {
    protected int x, y;
}

class Main {
    public static void main(String args[]) {
        Test t = new Test();
        System.out.println(t.x + " " + t.y);
    }
}
```

13. find the output of following code.

```
class Main {
    public static void main(String args[]) {
        System.out.println(fun());
    }
    int fun() {
        return 20;
    }
}
```

14.find the output of following code.

```
class Main {
    public static void main(String args[]) {
        System.out.println(fun());
    }
    static int fun() {
        return 20;
    }
}
```

15.find the output of following code.

```
class Main {
    public static void main(String args[]) {
          Main obj = new Main();
        System.out.println(obj.fun());
    }
    int fun() {
        return 20;
```

```
    }
}
```

16.find the output of following code.

```
class Test {
   public static void main(String args[]) {
       System.out.println(fun());
   }
   static int fun() {
       static int x= 0;
       return ++x;
   }
}
```

17.find the output of following code.

```
class Test {
   private static int x;
   public static void main(String args[]) {
       System.out.println(fun());
   }
   static int fun() {
       return ++x;
   }
}
```

18.find the output of following code.

```
class Point {
    protected int x, y;
    public Point(int _x, int _y)
    {
        x = _x;
        y = _y;
    }
}
public class Main {
    public static void main(String args[])
    {
        Point p = new Point();
        System.out.println("x = " + p.x + ", y = " + p.y);
    }
}
```

19.find the output of following code.

```
class Test
{
    int x = 10;
    public static void main(String[] args)
    {
     Test t = new Test();
     System.out.println(t.x);
    }
}
```

20.find the output of following code.

```
class Test
{
int y = 2;
int x = y + 2;
public static void main(String[] args)
{
         Test m = new Test();
         System.out.println("x = " + m.x + ", y = " + m.y);
    }
}
```

21.find the output of following code.

```
public class Test
{
      int x = 2;
      Test(int i) { x = i; }
      public static void main(String[] args)
      {
            Test t = new Test(5);
            System.out.println("x = " + t.x);
      }
}
```

22.find the output of following code.

```
class Test1
{
Test1(int x)
    {
      System.out.println("Constructor called " + x);
```

```
   }
}
class Test2
{
      Test1 t1 = new Test1(10);
      Test2(int i)
      {
      t1 = new Test1(i);
      }
      public static void main(String[] args)
      {
            Test2 t2 = new Test2(5);
      }
}
```

23.find the output of following code.

```
public class Calculator
{
      int num = 100;
      public void calc(int num)
      {
      this.num = num * 10;
      }
      public void printNum()
      {
       System.out.println(num);
       }
      public static void main(String[] args)
      {
            Calculator obj = new Calculator();
            obj.calc(2);
            obj.printNum();
      }
}
```

24.find the output of following code.

```
class Gfg
{
      Gfg()
      {
            System.out.println("ABC");
```

```
    }

    static Gfg a = new Gfg();

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

25.find the output of following code.

```
public class const_example {

    const_example() {

        system.out.println("Inside constructor");
    }
    public static void main(String args[]) {

        const_example c1 = new const_example();

        const_example c2 = new const_example();
    }
}
```

26.find the output of following code.

```
public class VariableMethodExample
{
    int instanceVariable = 10;
    void modifyValue(int value)
    {
        instanceVariable += value;
    }

  void printValue()
  {
   System.out.println("Instance variable value: " + instanceVariable);
  }
  public static void main(String[] args)
```

```
  {
   VariableMethodExample example = new VariableMethodExample();
   example.printValue();
   example.modifyValue(5);
   example.printValue();
   int localVar = 7;
   example.modifyValue(localVar);
   example.printValue();
   }
}
```

27.find the output of following code.

```
public class VariableMethodOutput {
    int x = 10;
    void modify(int value) {
        x = value;
    }
    void display() {
        System.out.println("Value of x: " + x);
    }
    public static void main(String[] args) {
        VariableMethodOutput obj1 = new VariableMethodOutput();
        VariableMethodOutput obj2 = obj1;
        obj1.modify(20);
        obj1.display();
        obj2.display();
        obj2.modify(30);
        obj1.display();
        obj2.display();
    }
}
```

28.find the output of following code.

```
public class VariableMethodExample
 {
    static int x = 5;
    int y = 10;
       public void modifyValues(int a, int b)
       {
        x += a;
        y += b;
```

```
    }

    public static void main(String[] args) {
        VariableMethodExample instance1 = new VariableMethodExample();
        VariableMethodExample instance2 = new VariableMethodExample();
        instance1.modifyValues(2, 3);
        instance2.modifyValues(4, 1);
System.out.println("Instance 1 - x: " + instance1.x + ", y: " +
instance1.y);
System.out.println("Instance 2 - x: " + instance2.x + ", y: " +
instance2.y);
    }
}
```

29.find the output of following code.

```
public class VariableMethodQuestion
{
    int x = 5;
    void modifyValue(int val) {
        x += val;
    }
    void printValue() {
        System.out.println("Value: " + x);
    }
    public static void main(String[] args) {
    VariableMethodQuestion obj = new VariableMethodQuestion();
    obj.printValue();
    obj.modifyValue(3);
    obj.printValue();
    int newValue = 7;
    obj.modifyValue(newValue);
    obj.printValue();
    VariableMethodQuestion anotherObj = new VariableMethodQuestion();
    anotherObj.modifyValue(10);
    anotherObj.printValue();
    }
}
```