1. import java.util.Scanner;

```java
class GreaterNumber{
    public static void main(String [] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter your first number : ");
        int num1 = input.nextInt();

        System.out.print("Enter your second number : ");
        int num2 = input.nextInt();

        if (num1 > num2){
            System.out.println("Sum of two numbers = " + (num1 + num2));
        }
        else{
            System.out.println("Your numbers are " + num1 + " & " + num2 );
        }
    }
}
```

2. import java.util.Scanner;

```java
class AbsoluteNumber{
    public static void main(String [] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter your first number : ");
        int num1 = input.nextInt();

        if (num1 >= 0){
            System.out.println("Absolute number of = " + num1 + " is " + num1);
        }
        else{
            int num2 = -(num1);
            System.out.println("Absolute number of = " + num1 + " is " + num2);
        }
    }
}
```

3. import java.util.Scanner;

```java
public class Marks {
    public static void main(String [] args) {

        Scanner input = new Scanner(System.in);
```

```java
            System.out.print("Marks of Chemistry : ");
            int marksChem = input.nextInt();

            System.out.print("Marks of Physics : ");
            int marksPhysics = input.nextInt();

            System.out.print("Marks of Com.Maths : ");
            int marksComMaths = input.nextInt();

            int total = marksChem + marksPhysics + marksComMaths;
            float average = total/3;

            if (average > 75){
                System.out.println("Pass");
            }
            else{
                System.out.println("Fail");
            }
        }

    }
```

4.
```java
import java.util.Scanner;

public class SuperDraw {
    public static void main(String [] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Unit price : ");
        float unitPrice = input.nextFloat();

        System.out.print("Amount : ");
        int amount = input.nextInt();

        float total = amount * unitPrice;

        if (total > 1500){
            System.out.println("You are entitled to the super draw");
        }
        else{
            System.out.println("try again");
        }
    }
}
```

5.
```java
import java.util.Scanner;

public class Discount {
    public static void main(String [] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Unit price : ");
        float unitPrice = input.nextFloat();

        System.out.print("Amount : ");
        int amount = input.nextInt();

        double total = amount * unitPrice;

        if (total > 500){
            double newtotal = total - (total * 0.05);
            System.out.println("New total = Rs." + newtotal);
        }
        else{
            System.out.println("No discount given");
        }
    }
}
```

6.
```java
import java.util.Scanner;

public class LeapYear {
    public static void main(String [] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter a year : ");
        int year = input.nextInt();

        if ((year % 4) == 0){
            System.out.println("Leap year");
        }
        else{
            System.out.println("Not a Leap year");
        }
    }
}
```

7.
```java
import java.util.*;

public class AreaOf_a_Circle {
```

```java
    public static void main(String [] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter radius : ");
        float radius = input.nextFloat();

        double area = Math.PI * radius * radius;
        System.out.println("Area of the circle = " + area + " Sqr Unit");
    }
}
```

8.
```java
import java.util.Scanner;

public class ATMWithdrawal {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        int currentBalance = 10000; // Initializing balance of the customer
        int dailyLimit = 5000;     // Maximum amount that can be withdrawn in a day
        double chargeRate = 0.02;   // Charge rate if balance is less than 5000

        System.out.print("Enter your amout (Rs.) : ");
        int withdrawalAmount = input.nextInt();

        if(withdrawalAmount > currentBalance){        // Check if amount entered is greater than current balance
            System.out.println("Withdrawal refused. Amount entered is greater than current balance.");
        }
        else if(withdrawalAmount > dailyLimit){       // Check if amount entered is greater than daily limit
            System.out.println("Withdrawal refused. Amount entered is greater than daily limit.");
        }
        else if (currentBalance < 5000) {      // Check if balance is less than 5000 and apply charge
            double charge = withdrawalAmount * chargeRate;
            double amountWithCharge = withdrawalAmount + charge;
            if (amountWithCharge <= currentBalance) {
                currentBalance -= amountWithCharge;
                System.out.println("Withdrawal successful. " + charge + " rupees charged as fee.");
                System.out.println("Current balance: " + currentBalance + " rupees");
            } else {
                System.out.println("Withdrawal refused. Not enough balance to cover the withdrawal and fee.");
            }
        }
```

```java
        else {
            if (withdrawalAmount <= currentBalance) {      // If balance is 5000 or more, no charge is
applied
                currentBalance -= withdrawalAmount;
                System.out.println("Withdrawal successful.");
                System.out.println("Current balance: " + currentBalance + " rupees");
            } else {
                System.out.println("Withdrawal refused. Not enough balance to cover the
withdrawal.");
            }
        }
    }
}
```

9.
```java
import java.util.*;

public class MaxNumber {
    public static void main(String [] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter your first number : ");
        int num1 = input.nextInt();

        System.out.print("Enter your second number : ");
        int num2 = input.nextInt();

        System.out.print("Enter your third number : ");
        int num3 = input.nextInt();    //three inputs

        int maxNum = num1;

        if(num2 > maxNum){
            maxNum = num2;
        }
        if(num3 > maxNum){
            maxNum = num3;
        }
        System.out.println("The maximum number is: " + maxNum);
    }
}
```

10.
```java
import java.util.*;

public class OddEven {
    public static void main(String [] args) {
```

```java
        Scanner input = new Scanner(System.in);

        System.out.print("Enter a number : ");
        int num = input.nextInt();     //input an integer

        if((num % 2)  ==  0 ){
           System.out.println(num +" is an even number");
        }
        if((num % 2) == 1){
           System.out.println(num  + " is an odd number");
        }

      }
    }
```

11. if(x==10){}
    if((x=100)!=10){}
    if((x=100)>0==true){}

12.   if(b){}
      if(b=false){}
      if(b==false){}
      if(b=false==false){}
      if((b=false)==false){}
      if(b=(false==true)){}

13. public class Example3 {
```java
      public static void main(String [] args) {
         int x = 10;
         System.out.println(x=9);       //prints 9
         System.out.println(x==9);      //prints true
         //System.out.println(x=9!=10);  //error
         System.out.println((x=9)==10);  //prints false
         System.out.println((x=9)<=10);  //prints true

      }
    }
```

14. public class Example4 {
```java
      public static void main(String [] args) {
         boolean b=true;
         //System.out.println(b);             //prints true
         //System.out.println(b=true);        //prints true
         //System.out.println(b==true);       //prints true
```

```java
    //System.out.println(b!=true);        //prints false
    //System.out.println(b=true==true);    //prints true
    //System.out.println((b=true)==false);  //prints false
    //System.out.println(b=(true!=false));  //prints true


  }
}
```

15.
```java
public class Example5 {
    public static void main(String [] args) {
      int x=99;
  if(x++==x){
   System.out.println("x++==x : "+x);
  }
  x=99;
  if(++x==x){
   System.out.println("++x==x : "+x); //prints ++x==x : 100
  }
  x=99;
  if(x==x++){
   System.out.println("x==x++ : "+x);   //prints x==x++ : 100
  }
  x=99;
  if(x==++x){
   System.out.println("x==++x : "+x);
  }
  x=99;
  if(++x==++x){
   System.out.println("++x==++x : "+x);
  }
  x=99;
  if(x++==x++){
   System.out.println("x++==x++ : "+x);
  }
  x=99;
  if(++x==x++){
   System.out.println("++x==x++ : "+x);  //prints ++x==x++ : 101
  }
  x=99;
  if(x++==++x){
   System.out.println("x++==++x : "+x);
  }


  }
```

```
    }

16. public class Example6 {
        public static void main(String [] args) {
            int x=99;
    if(x++==x){
     System.out.println("x++==x : "+x);
    }
    if(++x==x ){
     System.out.println("++x==x : "+x); // ++x==x : 101
    }
    if(x==x++){
     System.out.println("x==x++ : "+x); //x==x++ : 102
    }
    if(x==++x){
     System.out.println("x==++x : "+x);
    }
    if(++x==++x){
     System.out.println("++x==++x : "+x);
    }
    if(x++==x++){
     System.out.println("x++==x++ : "+x);
    }
    if(++x==x++){
     System.out.println("++x==x++ : "+x);   //++x==x++ : 109
    }
        }
    }

17. public class Example7 {
        public static void main(String [] args) {
            int x=99;
            int y=99;
            if(x++==y){
                System.out.println("x++==y : "+x+" : "+y);  //x++==y : 100 : 99
            }
            if(++x==y){
                System.out.println("++x==y : "+x+" : "+y);
            }
            if(x==y++){
                System.out.println("x==y++ : "+x+" : "+y);
            }
            if(x==++y){
                System.out.println("x==++y : "+x+" : "+y);  //x==++y : 101 : 101
            }
```

```java
        }
        if(++x==++y){
           System.out.println("++x==++y : "+x+" : "+y);   //++x==++y : 102 : 102
        }
        if(x++==y++){
           System.out.println("x++==y++ : "+x+" : "+y);      //x++==y++ : 103 : 103
          }
        if(++x==y++){
           System.out.println("++x==y++ : "+x+" : "+y);
          }
         if(x++==++y){
           System.out.println("x++==++y : "+x+" : "+y);
          }


      }

   }

18. public class Example8 {
      public static void main(String [] args) {
        int x=9;
        if(x>=10){
           System.out.println("Success");
        }
        if(x++>=10){
           System.out.println("Success");
        }
        if(++x>=10){
           System.out.println("Success");  //prints success
        }
        if(++x>=x++){
           System.out.println("Success");    //prints success
        }
        if(++x>x++){
           System.out.println("Success");
        }
        if(x++>=x++){
           System.out.println("Success");
        }
        if(++x<=x++){
          System.out.println("Success");  //prints success
        }
        if(x<=x++){
           System.out.println("Success");  //prints success
```

```
                }

            }
        }

19. public class Example9 {
        public static void main(String [] args) {
        int x=100,y=99;
        if(x==y){
           System.out.println("Success");
        }
        else{
           System.out.println("Failed");   //prints Failed
        }
        if(x++==++y){
           System.out.println("Success"); //prints Success
        }
        else{
           System.out.println("Failed");
        }
        if(x++==y++) {
           System.out.println("Success");
        }
        else{
           System.out.println("Failed");   //prints Failed
        }
        if(++x==y++)
        {
           System.out.println("Success");
        }
        else{
           System.out.println("Failed");   //prints Failed
        }
        }
    }

20. i = 1, j = 2, k = 3 and m = 2;
    System.out.println( i ==1);                     //true
    System.out.println( j ==3);                     // false
    System.out.println( ( i >=1) && ( j<4));        // true
    System.out.println( ( m <=99) & ( k < m ) );    // false
    System.out.println( ( j >= i ) || ( k == m ) ); // true
    System.out.println( ( k + m < j )|(3- j>= k));  // true
    System.out.println( !( k > m ) );               //false
```

21. int x=20,y=60;
    boolean bool;
    System.out.println(x=10);   //10
    System.out.println(bool=true);   //true
    System.out.println(x=10>0);   //true
    System.out.println((x=10)>0);   //true
    System.out.println(bool=(x=10)>0);   //true
    System.out.println(bool=x+y>100);   //false

22. int x=1;   //prints 1 2 3
    int x=2;   //prints 2 3
    int x=3;   //prints 3
    int x=4;   //prints 4
    int x=5;   //prints 4
    int x=0;   //prints 4

23. Option A if(x>0){a=0;} is not a legal statement because the value of x is not declared or initialized.
    Option B. a=0; can be inserted
    Option C if(y>0){a=0;} is not a legal statement because the value of y is declared as a final variable, meaning its value cannot be changed after initialization.
    Option D if(z>0){a=0;} is a legal statement, but it requires z to be declared and initialized before line 10. Otherwise, it will result in a compile-time error.
    Option E if(true){a=0;} is a legal statement, but it is not necessary to use an if statement since the condition is always true.
    Option G if(y>0){a=0;}else {a=-1;} is not a legal statement because the value of y is declared as a final variable, meaning its value cannot be changed after initialization.
    Option H a=z>0?0:-1; is a legal statement, but it requires z to be declared and initialized before line 10. Otherwise, it will result in a compile-time error.

24. A. Line 1 - It prints the value of variable x which is declared and initialized in the main method.

    B. Line 2 - It prints the value of variable x which is declared and initialized in the main method.

    C. Line 3 - It prints the value of variable y which is declared and initialized in the inner block.

    D. Line 4 - It prints the value of variable z which is declared and initialized in the innermost block.

    E. Line 5 - It prints the value of variable x which is declared and initialized in the main method.

    F. Line 6 - It prints the value of variable y which is declared and initialized in the inner block.

    H. Line 8 - It prints the value of variable x which is declared and initialized in the main method.

Line 9 - It generates a compile-time error because the variable y is declared in the inner block and is not accessible outside of it.

Line 10 - It generates a compile-time error because the variable z is declared in the innermost block and is not accessible outside of it.

25. When a %= b is executed, the value of a becomes -1 because -5 % -2 is -1.
    Next, a /= b will attempt to divide -1 by -2, which results in a divide-by-zero error because integer division is used. The program will terminate with an ArithmeticException.
    Therefore, the correct option is not listed among the given options.

26. The output of the program is "g,i,l".
    Explanation:

    The expression at line 1 evaluates to false, so the value of b is set to 'g'.
    The expression at line 2 evaluates to false, so the value of c is set to 'i'.
    Since the condition at line 3 is false, the variable d is not initialized.
    The condition at line 4 is also false, so the variable d remains uninitialized.
    The condition at line 5 is true, so the value of d is set to 'l'.
    The print statement at line 6 outputs the values of b, c, and d separated by commas.

27. Input student average : 99.0
    Pass
    Thanking you..

    Input student average : 75.0
    Pass
    Thanking you..

    Input student average : 49.99
    Fail
    Thanking you..

    Input student average : 50.01
    Pass
    Thanking you..

    Input student average : 50.0
    Pass
    Thanking you..

    Input student average : 49.0
    Fail

Thanking you..

Input student average : 25.0
Fail
Thanking you..

28. Line 1: 20
    Line 2: 11
    Line 3: Compilation error (missing operator between 5 and the opening parenthesis)
    Line 4: -4.92962962962963
    Line 5: 4.625
    Line 6: Compilation error (missing operator between 6 and the opening parenthesis)
    Line 7: 13.0
    Line 8: 5
    Line 9: -11.989999999999998
    Line 10: 8
    Line 12: 1
    Line 13: 3
    Line 14: 4 (prints a space and then 4)
    Line 15: 2

29. Line 1: a=2, b=3, c=4, d=5, x=10
    Line 2: a=14, b=12, c=11, d=10, x=34
    Line 3: a=10, b=10, c=10, d=10, x=10
    Line 4: a=10, b=10, c=10, d=10, x=10
    Line 5: 10 10 10 10 10

30. Line 1: false
    Line 2: true
    Line 3: true
    Line 4: true
    Line 5: false
    Line 6: true
    Line 7: true
    Line 8: false