```java
package exam1;
//1

// what is the output of this program? explain each commented line

public class Strings {
    public static String getString() {
        return "12";
    }

    public static void main( String args[] ) {
        String stringA = "1";
        String stringB = "2";
        int intA = 2;
        int intB = 1;
        String stringC = "1" + "2";
        String stringD = "1" + intA;
        String stringE = intB + "2";
        String stringF = getString();

        System.out.println("" + ( stringA == stringB)  ); //1
        System.out.println("" + ( stringD == "1" + "2")  ); //2
        System.out.println("" + ( stringD == "12" )  ); //3
        System.out.println("" + ( stringC.equals( "" + 10 + 2 ) ) ); //4
        System.out.println("" + ( "1" + "2" == "12" ? "true" : "false" ) ); //5
        System.out.println("" + ( stringD.equals( 1 + "2" ) ) ); //6
        System.out.println( stringC == stringF); //7
        System.out.println("" + ( "1" + "2" == "12")  ); //8

    }
}

```

```java
package exam1;
//2

//    For each of the following patterns, provide TWO strings that would be matched:

//    ^[ab]?$
//    ^[ab]c?
//    ^a?b|b|c?$
//    ^(.)(.)[0-9]\2\1$

//    For each of the following pattern descriptions, provide a pattern that would match them:

//    a palindrome with a single letter
//    a decimal number with up to 3 digits followed by the decimal point and 2 digits
//    A proper word (first letter capitalized). You don't need to check for the word existence.
//    The word "dog" followed "friendly", or a 3-digit number that has no digit "9" or "8"


public class Patterns {
}

```

```java
package exam1;
//5

// what is the output of this program?
// explain what the method change does specify all involved variables types (parameter, local, static, instance field)

public class Arguments {

    int value = 0;
    private Arguments o = this;

    public Arguments change(int o) {
        this.o.value = o;
        return this;
    }

    public String toString() { return String.valueOf(value); }

    public static void main(String[] args) {
        Arguments o = new Arguments().change(2);
        System.out.println(o.value);
        System.out.println(o.change(3));
    }

}

```

```java
package exam1;
//4

// For each statement, mark True or False and Explain the reason to support your answer.

//        the import statement allows the source code to find and use java classes that are not part of the same package
//        when an import statement is used, the code associated with the class is loaded to allow the use of the imported class
//        concatenating two string literals result in a single string literal due to a compile-time optimization
//        method overriding done in a sub-class is an example of polymorphism




public class TrueFalse {
}

```

```java
package exam1;
//3

// what is the output of this code?
// how many times fields are updated in this code?
// if we switch access of increment(Inheritance o) method to private, would the execution change?
// could increment() be changed to static?

public class Inheritance {
    private int nsi;

    public Inheritance() {
        this("custom constructor");
        nsi = 42;
        increment();
    }

    private Inheritance(String message) { System.out.println("object created"); }

    public static Inheritance increment(Inheritance o) {
        o.nsi += 1;
        return o;
    }

    private Inheritance increment() {
        nsi++;
        return this;
    }

    public String toString() { return String.valueOf(nsi); }

    public static void main(String[] args) {
        System.out.println(new Inheritance().increment());
        System.out.println(Inheritance.increment(new Inheritance()));
    }
}

```