

Tutorial-8 Solution

factorial.java

```
package tut08;

import java.util.Scanner;

public class factorial {

    public static void main(String[] args) {

        int n, fac;

        Scanner s = new Scanner(System.in);

        System.out.print("Please input a positive integer less than 15: ");

        n = s.nextInt();

        if ((n < 1) || (n > 14)) System.out.println("Invalid input");

        else {

            fac = n;

            if (n == 1) {

                System.out.println("1! = 1");

            }

            else {

                System.out.print(n + "! = " + n);

                for (int i = n-1; i >= 1; i--) {

                    System.out.print(" * " + i);

                    fac *= i;

                }

                System.out.println(" = " + fac);

            }

        }

    }

}
```

power.java

package tut08;

import java.util.Scanner;

public class power {

public static void main(String[] args) {

int x, y;

int result = 1;

Scanner s = **new** Scanner(System.in);

System.out.print("Please input two positive integers less than 15: ");

x = s.nextInt();

y = s.nextInt();

if ((x < 1) || (x > 14) || (y < 1) || (y > 14))

System.out.println("Invalid input");

else {

for (**int** i = 1; i <= y; i++) result *= x;

System.out.println(x + "^" + y + " = " + result);

}

}

}

loopCtrl.java

```
package tut08;  
  
public class loopCtrl {  
    public static void main(String[] args) {
```

```
        int counter = 0;  
        for (int i=1; i < 10; i += 2)  
            counter++;  
        System.out.println(counter); // 5
```

```
        counter = 0;  
        while (counter <= 10) counter += 2;  
        System.out.println(counter); // 12
```

```
        counter = 0;  
        do counter++;  
        while (counter < 0);  
        System.out.println(counter); // 1
```

```
        counter = 0;  
        for (int i=1; i < 10; i++) {  
            if ((i % 2) == 0) continue;  
            counter++;  
        }  
        System.out.println(counter); // 5
```

```
counter = 0;
while (counter < 10) {
    if ((counter % 2) == 0) break;
    counter++;
}
System.out.println(counter); // 0
```

```
counter = 0;
/*for ( int i=1; i != 10; i++) {
    counter++;
    i++; // infinite loop
}
System.out.println(counter);*// // infinite
}
}
```