

Lesson on The Math Class in Java

The Math class contains a number of methods for calculations. The following table gives a description of just a few of the functions found in the Math class.

Method	Description
min (arg1, arg2)	Returns the smaller of the two arguments.
max (arg1, arg2)	Returns the larger of the two arguments.
pow(base, exponent)	Returns the value of the first argument raised to the power of the second argument.
sqrt(d)	Returns the square root of the argument.
sin(d)	Returns the sine of the specified double value.
cos(d)	Returns the cosine of the specified double value.
tan(d)	Returns the tangent of the specified double value.
toDegrees(d), toRadians(d)	Converts the argument to degrees or radians.

The following program makes use of a number of functions found in the Math class. Can you guess the output of the program?

```
public class UsingMathClass
{
    public static void main (String[] args)
    {
        int x = Math.min (45, 20);
        int y = Math.max (30, 5);
        double a = Math.pow (3, 2);
        double p = Math.sqrt (16);

        System.out.println (x);
        System.out.println (y);
        System.out.println (a);
        System.out.println (p);
    }
}
```

When executed, the following class asks the user to enter a whole number by means of the keyboard. Then it asks the user to enter a second number. The program then outputs the minimum number out the two entered values.

```
public class FindMinimum
{
    public static void main (String[] args)
    {
        System.out.println ("Please enter a whole number");
        int x = Keyboard.readInt();
        System.out.println ("Please enter another whole number");
        int y = Keyboard.readInt();

        int min = Math.min(x, y);

        System.out.println ("The minimum of the two numbers is " + min);
    }
}
```

Exercise

1. Write a program that after given two numbers, it outputs the biggest value.
2. Write a program that after being given 3 numbers, it outputs the smallest one.
3. Same as the previous question but now you enter 4 numbers.
4. Write a program that displays the square root of a number entered by the user.
5. Write a program that after being given the base and index of a number, from the keyboard, it calculates the number i.e. if it is given b (base) and a (index) it will output b^a .
6. Write the program represented by the following flowchart:

