

# BIS2151E - Programming in Java - Prof. Dr. Burkard

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## Testat No. 2 Theory - Jansen/Gabriel

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### Task 1:

If you can read this, Task 1 was submitted.

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### Task 2:

#### Math:

1. `pow(double a, double b)` : The static `pow()` method of the Math class raises a to the power of b and returns a double as result. --> a multiplied b times with itself.
2. The method is names `abs()` and can be used by calling `Math.abs()`
3. `public static final double PI` --> **3.141592653589793** *"The double value that is closer than any other to pi, the ratio of the circumference of a circle to its diameter."*

#### String:

4. Splits this string around matches of the given regular expression.
5. `public String toLowerCase()` can be used to lowercase all letters of a string. just like `split()`, this is an instance method and needs a String to be called.

#### BigInteger:

6. `public boolean isProbablePrime(int certainty)` can be used for that. --> *"Returns true if this BigInteger is probably prime, false if it's definitely composite. If certainty is  $\leq 0$ , true is returned."*

#### Thread:

7. `public static void sleep(long millis)` throws `InterruptedException` --> can be used to to let a programm sleep for a certain number of milliseconds. Can be used on different, instantiated Threads or the main Thread of course.

#### General Java research:

8. Every Java class (except the Object class itself) inherits from the *Object* class.
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#### LottoMachine Code:

#### To change LottoMachine parameters:

Call `LottoMachine.setParameters(lottoBalls, lottoLowerBound, lottoUpperBound, sortLotto);`

**Arguments:**

- `lottoBalls`: the amount of ball rolls (*real world: 6*)
- `lottoLowerBound`: the lowest number on any ball (*real world: 1*)
- `lottoUpperBound`: the highest number on any ball (*real world: 49*)
- `sortLotto`: should the representation of the lotto result be sorted? (*real world: yes*)

**Example (with default values):**

```
myLotto.setParameters(6, 1, 49, false);
```