

# „C++ / GUI “

## Exercise 22

### 1 Negative Roots

1. Write a function that calculates the square root of its parameter. Print the square root of -5.
2. Check for a negative parameter. In this case, stop the program.
3. Instead of stopping the program. Use an exception.
4. implement your own exception class. use speaking constructors and destructor.
5. catch your exception. print a message on the screen. set the result to 0.

### 2 Please Divide by Zero

1. implement a division operator for your Number class.
2. try to divide by zero. use double as well as int for your tests.
3. implement an exception to unify the behaviour.

### 3 std::vector

1. define a class that inherits from std::vector. implement operator [] in a way that it throws std::out\_of\_range.
2. Compare your implementation to the one of your neighbour.
3. Now go ahead and write two own exception classes: one for an index underflow and the other for an index overflow.
4. check your class with the sorting algorithms from the previous excercises.

Have fun!