# Programming Techniques
## 1st Semester 2018/2019

## Exercises

### Algorithms

1. Construct a flowchart for finding the maximum number between $x$, $y$ and $z$.

### Operations

1. Write a program that converts from hours to minutes.
2. Write a program that reads two integer values. Write a program to compute and report the values of the following operations:
   (a) sum
   (b) difference
   (c) product
   (d) division
   (e) remainder
3. Write a program that reads the measures of a trapezoid and returns its area.
4. Write a program that reads the number of coins (2 euros, 1 euro, 50 cents,....,2 cents and 1 cent) and prints the total amount, e.g, 10 euros and 15 cents.
5. Write a program that switches the contents of two int variables.

### If Control

1. John bought a computer by some amount and then sold it by another value. Write a program that, after reading the buy price and the sell price, tells John if he made some profit or if he lost money with the transaction. Also the program should return the positive or negative amount made with the transactions.
2. A company sells computers for 1500 EUR. Although if the quantity ordered is equal to or exceeds 500 units a discount of 5% is applied and if the order is equal to or exceeds 1000 units the discount applied is 10%. Write a program that allows the seller to know the total value of the order and the discount applied by inserting the quantity of computers ordered.
3. Write a program that determines a student's grade. The program will read three types of scores (quiz, mid-term, and final scores) and determine the grade based on the following rules:
   - if the average score =90% => grade=A
   - if the average score >= 70% and <90% => grade=B
   - if the average score>=50% and <70% => grade=C
   - if the average score<50% => grade=F
4. Write a program that after reading three integers x,y and z determines if there exists a triangle $\Delta$(a,b,c).
5. Write a program that after reading three real numbers determines which one is the greatest.
6. Write a program that computes the roots of a second order polynomial.