- **<u>Senior 1</u> [elective course]** *2 periods of 40 min. / week*
  1. Review of elementary functions (part I)
     1. *linear and affine functions*
     2. *Second degree and Homographic functions*
     3. *Parabola and Hyperbola construction and properti*
  2. Review of elementary functions (Part II)
     1. *Absolute value and Radical*
     2. *Exponential and Logarithm (no formal def.)*
  3. Linear programming
     i. Graphic solutions of linear systems
        a. *Systems of equations*
        b. *Systems of inequalities*
     ii. Applications to economics
  4. Problems of inequalities in non linear systems
  5. Geometric transformations of graphs of functions
     1. change of equation and construction by :
        i. *symetries through the axes*
        ii. *symetries through one point.*
  6. Sequences and Series :
     1. definitions
     2. properties :
        i. Variations : *increasing , decreasing, constant*
        ii. Majorants and minorants
        iii. Limits :
           1. *definitions (convergence / divergence)*
           2. *theorem of convergence.*
  7. Geometric and Arithmetics sequences
     1. *definitions*
     2. *special properties*
     3. *correspondance between of the two types*
  8. Sequences defined by functions : $u_n = f(n)$
  9. Recursive sequences : $u_{n+1} = f(u_n)$.
     1. *Graphic representation*
     2. *Special properties*
     3. *variations*
  10. Adjacent Sequences : definition and theorem.