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# Selective test content

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**1. Technical and scientific area (mathematics, physics). The test will be in written form. General knowledge at an intuitive and logical level of reasoning within the following fields:**

- Euclidean geometry (two and three dimensional). In particular the Pythagorean and the Thales theorems and their applications; the computation of areas and volumes.
- Trigonometry in the right triangle: definition of the trigonometry ratios (sine, cosine, tangent) of an acute angle and their applications to geometrical situations with right triangles.
- Basic Analytic Geometry in the plane: points, lines, circumferences, parabolas.
- Geometric vectors: definition, properties, sums, linear combinations with applications in elementary physics (forces, lever,...).
- Topics in pre-calculus: direct and inverse proportionality, secondary school algebra, real numbers, first and second degree equations.
- Basic real functions: linear, rational, second degree, power functions and their inverse functions.

**2. Historical-Humanistic area (History of arts and architecture, drawing). The test will be in written form.**

- General knowledge of History of arts and architecture (most representative buildings and artists), characteristics of the main architectural styles and artistic currents.
- General knowledge of the essential principles of technical drawing and visual representation

**3. Foreign language:**

- There will be a written English language test