Short list of theorems for Final Exam

One of the topics listed here will be included (in a rephrased form) in the exam. It will be required to formulate the relevant definitions and theorems, and provide a detailed proofs. The word *section* means below a section from the textbook *Lessons in Geometry* by Jacques Hadamard, the words *Isometries* and *Similarity* refer to files isometries.pdf and similarity.pdf.

(1) Tests for parallel lines, section **38**.
(2) Theorems about concurrent lines in a triangle, sections **52 - 54, 56**.
(3) Existence and uniqueness of a circle passing through three points, section **57**.
(4) Intersection of a line and a circle, section **58**.
(5) Theorems about a diameter and a chord perpendicular to it, sections **61, 63**.
(6) Theorems about an inscribed angle, section **73**.
(7) Corollaries of the theorem about an inscribed angle, sections **74 -80**.
(8) Composition of two reflections, Theorem 7 from *Isometries*.
(9) Properties of homotheties. A homothety as a similarity transformation, Theorems 1 and 2 from *Similarity*.
(10) Similarity tests for triangles, Theorems 5 - 7 from *Similarity*.
(11) Theorem about a bisector, section **115**.
(12) Geometric means in a right triangle, sections **123, 125**.
(13) Pythagoras Theorem, section **124**.