

ZMATH 2011b.00671

Kang, Meekwang

A study on the comparison of triangle congruence in Euclidean Geometry.

J. Korea Soc. Math. Educ. Ser. A, Math. Educ. 49, No. 1, 53-65 (2010).

Summary: ‘The congruent conditions of triangles’ plays an important role to connect intuitive geometry with deductive geometry in school mathematics. It is induced by ‘three determining conditions of triangles’ which is justified by classical geometric construction. In this paper, we analyze the essential meaning and geometric position of ‘congruent conditions of triangles’ in Euclidean Geometry and investigate introducing processes for them in the Elements of Euclid, Hilbert congruent axioms, Russian and Korean textbooks, respectively. Also, we give justifications for construction methods of triangles having three segments with fixed lengths and angles equivalent to given angles, which can be directly applied to the teaching of geometric constructions meaningfully.

Classification: G53

Keywords: elementary geometry; plane geometry; congruent figures; congruent transformations; transformation geometry; congruence axioms; axiomatics; geometric constructions; triangles