

Application of Hexagonal Fuzzy Number in Finding the Expected Time Duration in a Transportation Network Problem

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Abstract: In this paper, expected time duration in a transportation problem for the critical path was determined by applying the new ranking method. This article proposed to solve the fuzzy transportation problem using hexagonal Fuzzy number. The transportation problem is solved using new proposed ranking method of hexagonal Fuzzy Number. The proposed transportation is formulated to a crisp transportation problem and Solved by using ranking of hexagonal Fuzzy number. Numerical examples are illustrated for the new proposed ranking method. This paper intends to introduce a different ranking approach for obtaining the expected time of the fuzzy project network. In the under consideration network problem, the activity time duration is calculated by applying some operations to the fuzzy hexagonal number. This ranking method is derived from centroid method for hexagonal fuzzy numbers and it proposes an advanced ranking approach by applying the centroid of the hexagonal fuzzy number. In this paper the hexagon is separated into two triangles and one polygon. By applying the right angle and polygon centroid formula for triangle and polygon, we can calculate the centroid of each triangle and polygon and hence find out the centroid of the centroid. Also the some changes are made to introduce the new ranking method of hexagonal Fuzzy Number.

Keywords: Fuzzy hexagonal number, ranking function, centroid, proposed ranking method, expected time, the centroid of centroid, fuzzy transportation problem

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