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Abdul-Rehman Kashif* (kashmology@gmail.com), University of Ha'il, Department of Mathematics, Ha'il, Saudi Arabia, and **Muhammad Shoaib**. *Regions of central configurations in a 4+1-body problem.*

A central configuration for n-body problem occurs when the position vector of each particle with respect to the center of mass is a common scalar multiple of its acceleration. We study the central configuration of a symmetric 4+1-body problem where four of the masses are placed at the vertices of a rhombus and the fifth mass can take various positions on the y-axis which is the axis of symmetry. We classify regions in the phase space where it is possible to choose positive masses (or ratio of positive masses) which will make the configuration central. Central configurations are not possible in the compliment of the above said region. We will also comment on the finiteness of central configurations of this particular set-up. (Received September 16, 2014)