

Problem 5.4 (c) – Explanation

The current formulation of the problem, in linear problem domain, cannot withstand discontinuity as it would lead to intense mesh refinement. As we are specifically dealing with linear problems.

But, in this case, the shape functions for triangle would be linear whereas the shape function of rectangle would be Quadratic. There will be 'jump discontinuity' witnessed at the joining interface.

Though, the temperature gradient remains constant along the element boundaries and it also ensures C0 Continuity.