21-S-4-6-AG-069

Point A is located at coordinate (A_x, A_y, A_z). Point B is located at coordinate (B_x, B_y, B_z). Both points are contained within a cube of side length *X*. A force $F = F$ Newtons is applied directly downwards at point A. If we say that the force is applied two units lower on the z-axis, are there any changes to the external behaviour of the body? Are there any changes to how this external behaviour is described (other than position)? Are there any changes to internal behaviours? Repeat the questions again, but move the force to point B instead.

ANSWER:

a) Point A minus *X* in the z-axis
   The external behaviour of the body is unchanged.
   The description of the behaviour does not change (principle of transmissibility).
   The internal behaviour changes (the stress concentration moves with the position).
b) Point B
   The external behaviour of the body is unchanged.
   The description of the behaviour changes (a couple moment is added).
   The internal behavior changes (the stress concentration moves with the position).