Quiz 1 Review (not graded)

**Problem 1:**
Consider a simply supported elastic beam of length $l$ and moment of inertia $I$. The beam is loaded by a concentrated load located at a distance $a$ from the left support. Determine the following:

a) The deflected shape of the beam
b) The location of maximum deflection
c) The stiffness of the beam, which is the relationship between load and the deflection under the load.
d) The profile of shear stresses and bending moment
e) Check for the continuity condition under the point load and count the number of unknown integration constants and boundary/continuity conditions
f) Find the location and magnitude maximum stress in the beam.

**Problem 2:**
Change the boundary conditions from simply supported to clamped at both ends and discuss how the solution method would change, in particular, would the number of integration constants and boundary/continuity conditions be the same as in Problem 1
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