In Fig. P10.29 is shown a cantilever beam, subjected to axial and lateral loads and made from a material that has an elastic, perfectly plastic constitutive law with $Y = 60{,}000$ psi.

(a) What is the largest value of q_0 for elastic action throughout?

(b) What is the largest value of q_0, allowing for plastic behavior?

(c) What is the minimum value of q_0 so that the bottom fibers just begin to yield? What are the depths of plastic penetration d_1 and d_2 for a load q_0 that is 1.1 times the value just calculated?