Class Exercise #20
1.050 Solid Mechanics   Fall 2004

Assume that the concrete in the beam of rectangular section shown, can only support a compressive stress. The steel rods carry all the tension.

Develop a quadratic equation for the location of the neutral axis, *d/h* , in terms of the geometric parameters shown and the Elastic modulii of the steel (= E_s) and of the concrete (= E_c) from the requirement that the resultant force in the x direction must be zero.