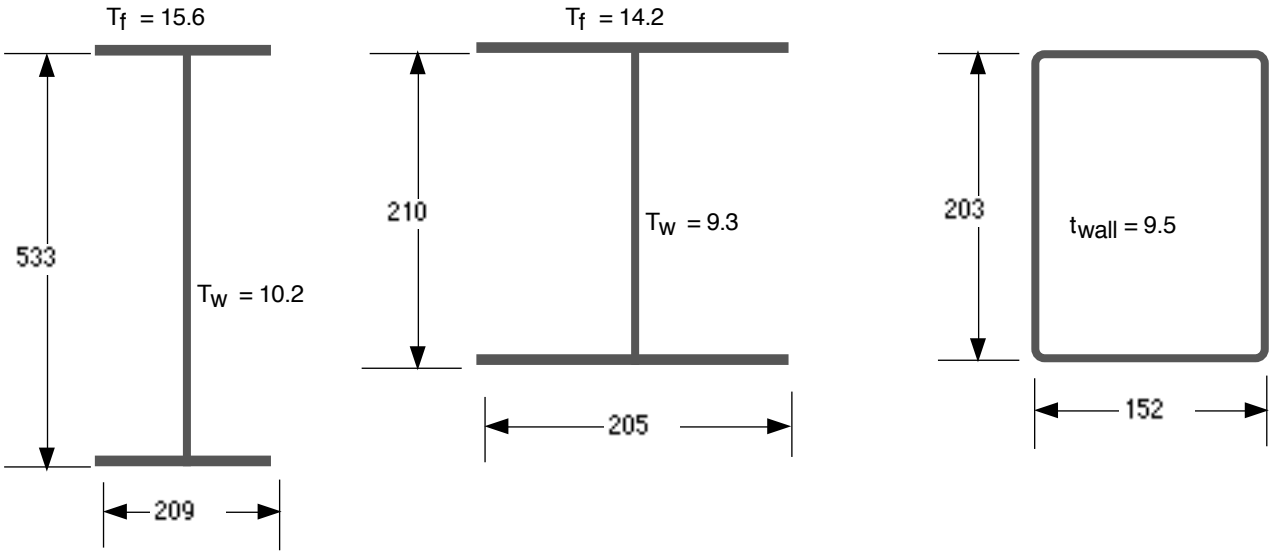
COMPRESSION MEMBERS

1. Find the elastic bukling load of the following sections which are used as pin-ended columns 5m long. Take E = 200kN/mm^2. [1890 kN, 1610 kN, 1830 kN]



2. The 210 x 205 section , see above, is used as a 7m long column. It is completely fixed at one end, while its other end is simply supported about its minor axis and free about its major axis. Find the critical buckling load. [610 kN about the major axis]

3. For the column shown in Fig.1 show that at buckling $tan\{k(1-n)L\} = -knL$ where $k = \sqrt{(P/EI)}$.

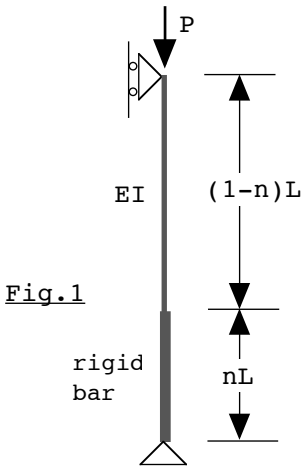


Fig.1

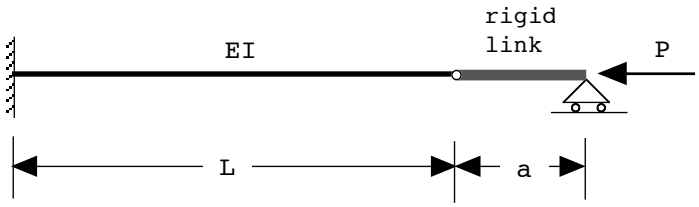


Fig.2

4. Show that at buckling of the assembly shown in Fig.2, $tan\ kL = k(a + L)$ where
$k = \sqrt{(P/EI)}$.