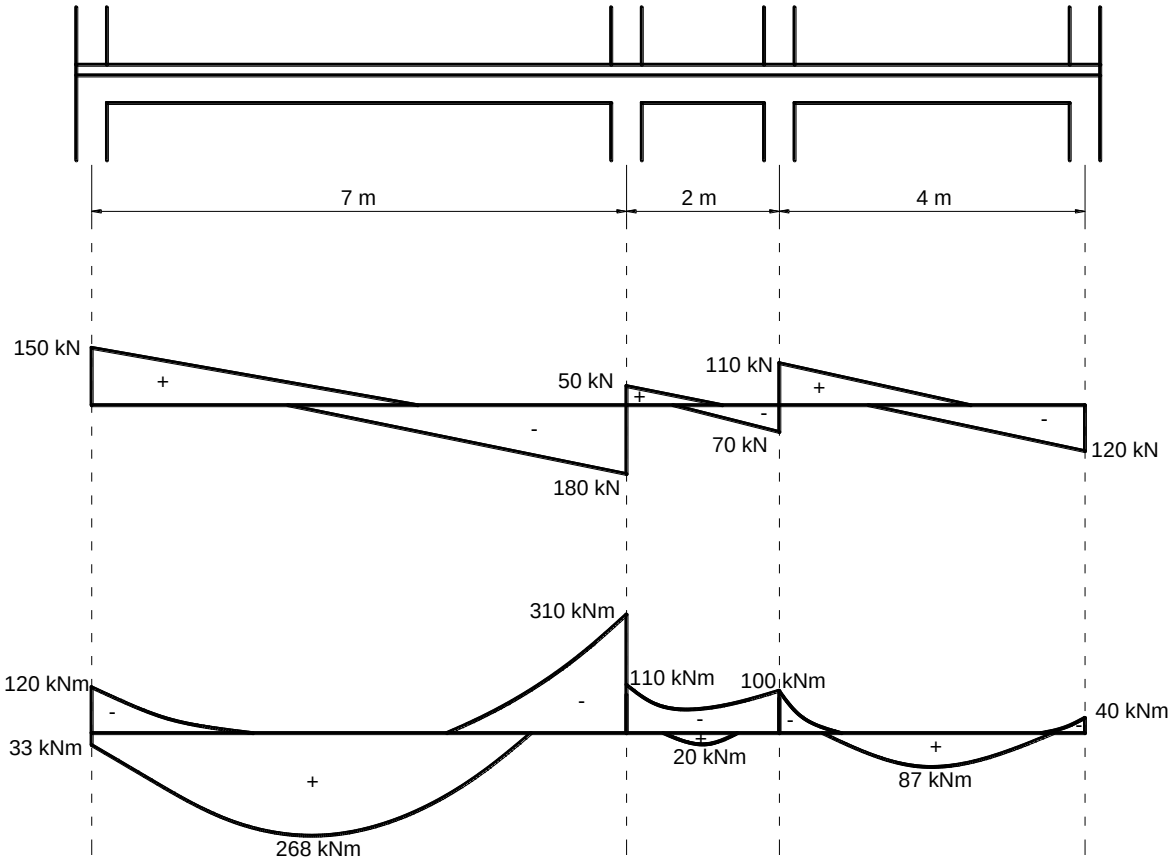
CE 382 HOMEWORK 4[1]



The envelope shear and moment diagram of a three span continuouss beam is given in the figure. Make the final design of the beam. Materials are C25 and S420. Consider a 140 mm thick slab in your calculations. The flange width can be taken as 1000 mm. All columns are 400×400 mm and all beams are 300×500 mm. Clear cover can be considered as 40 mm. consider a minimum amount of compression steel as prescribed in the code provisions given below:

TS500 7.3: At least one third of the tension reinforcement at the mid-span should extend up to the support and be properly anchored there.

TEC 2007 3.4.2.3: For the load carrying systems in the 1st and 2nd earthquake zone, bottom reinforcement at beam supports shall not be less than 50% of the top reinforcement at the same section. However, this ratio shall be reduced to 30% for the third and fourth earthquake zones.

TEC 2007 3.4.3.1a: At least ¼ of the reinforcement of greater beam top reinforcement at both beam ends shall be continuous along the beam.

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[1] **ATTENTION TO ALL STUDENTS**

Assignment Date and Time: April 30, 2012.

Due Date & Time: May 4, 2012 @ 23.00

This homework is distributed electronically via METU ONLINE CE382 website. The students should hand over their finished work via the same way electronically. The homework submissions that do not obey above conditions will be counted as void.