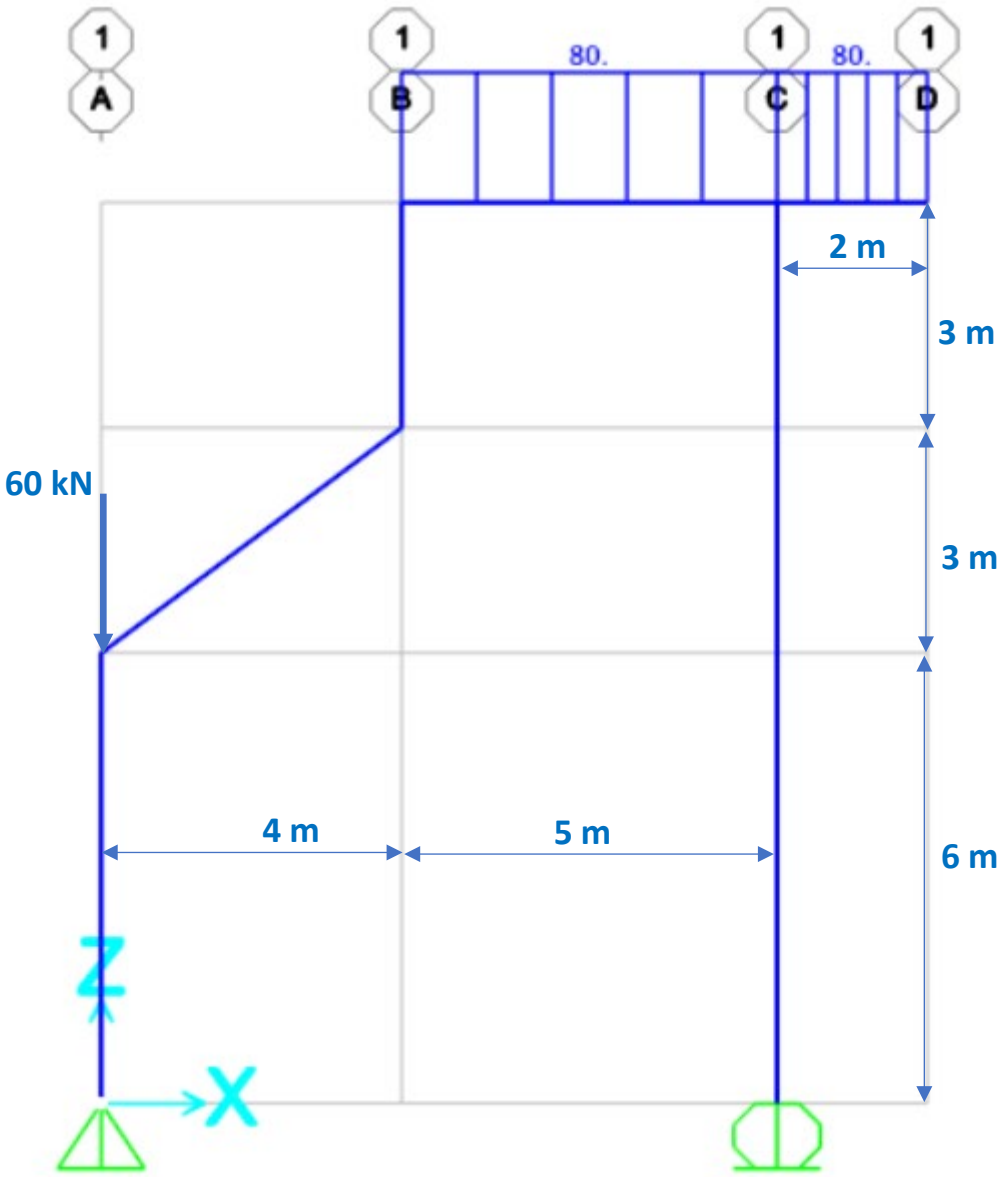
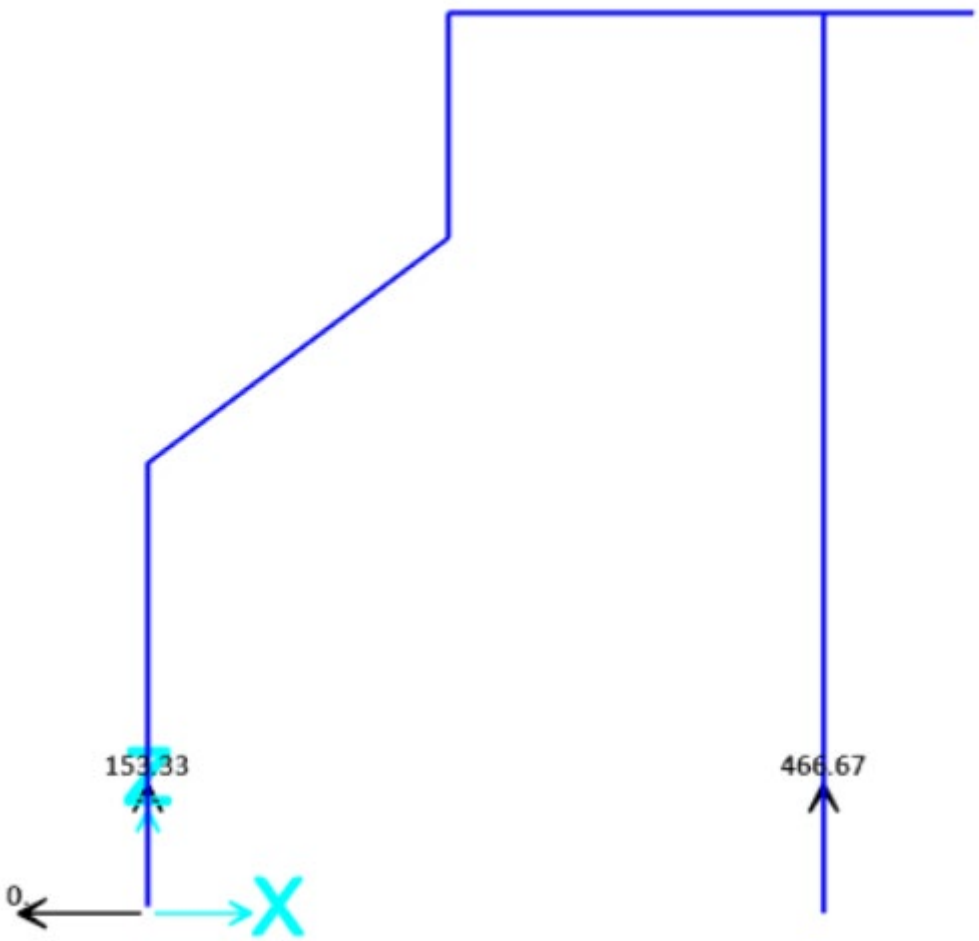
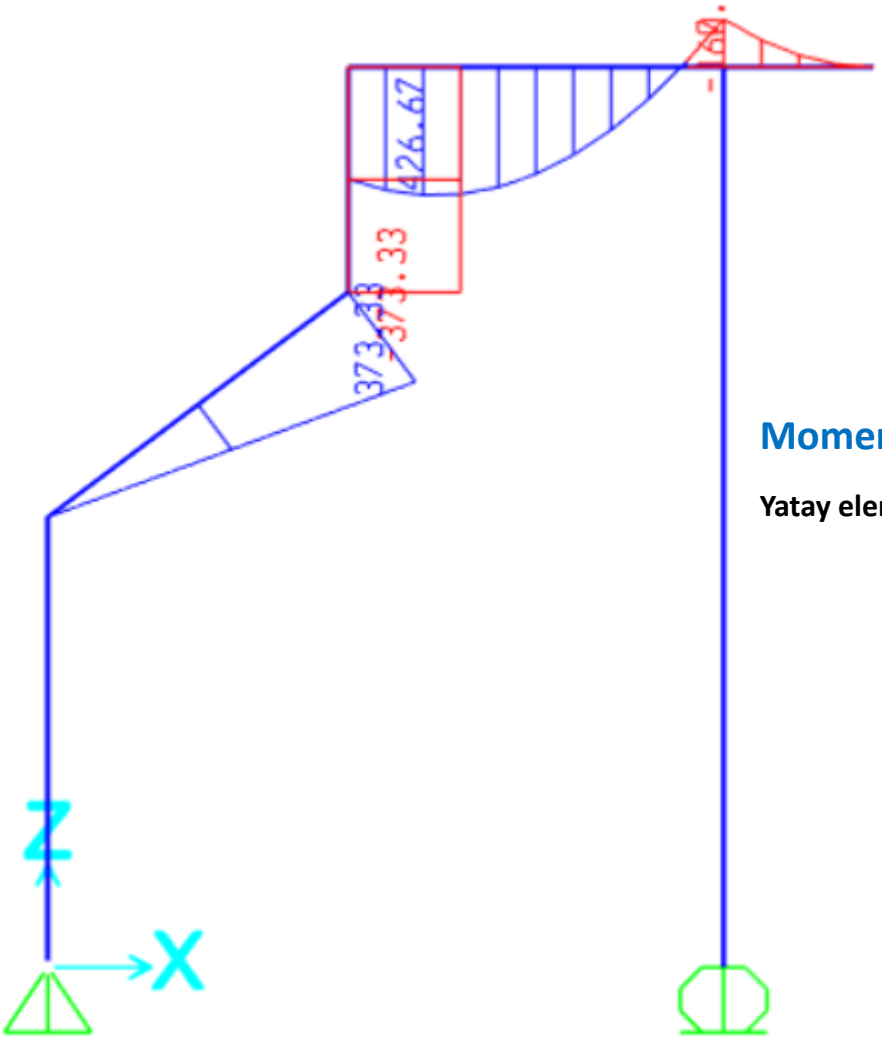
Soru 1 çözümü





Mesnet Tepkileri



Moment Kuvvet Diyagramı

Yatay elemanda M_{max} = 426.67 kNm

Case: DEAD

Items: Major (V2 and M3) | Single valued

End Length Offset (Location)

I-End: Jt: 4, 0. m, (0. m)

J-End: Jt: 5, 0. m, (5. m)

Display Options

- (•) Scroll for Values
- ( ) Show Max

Location: 1.01042 m

Equivalent Loads - Free Body Diagram (Concentrated Forces in KN, Concentrated Moments in KN-m)

Dist Load (2-dir)

80. KN/m
at 1.01042 m
Positive in -2 direction

Resultant Shear

Shear V2

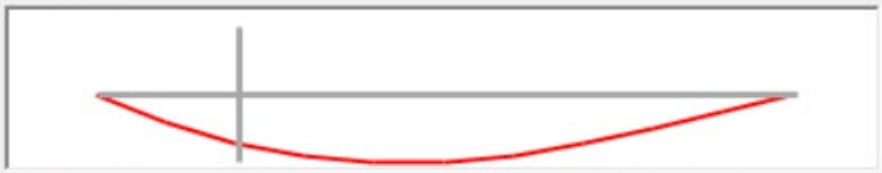
-12.5 KN
at 1.01042 m

Resultant Moment

Moment M3

426.5972 KN-m
at 1.01042 m

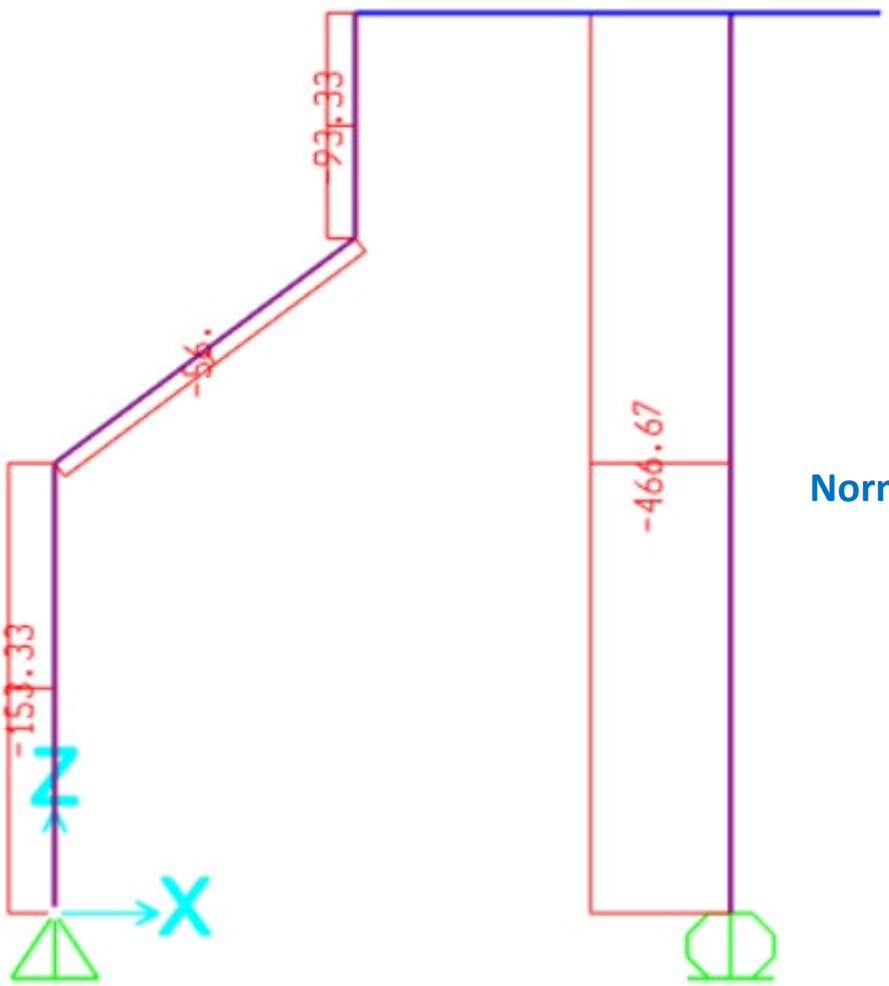
Deflections



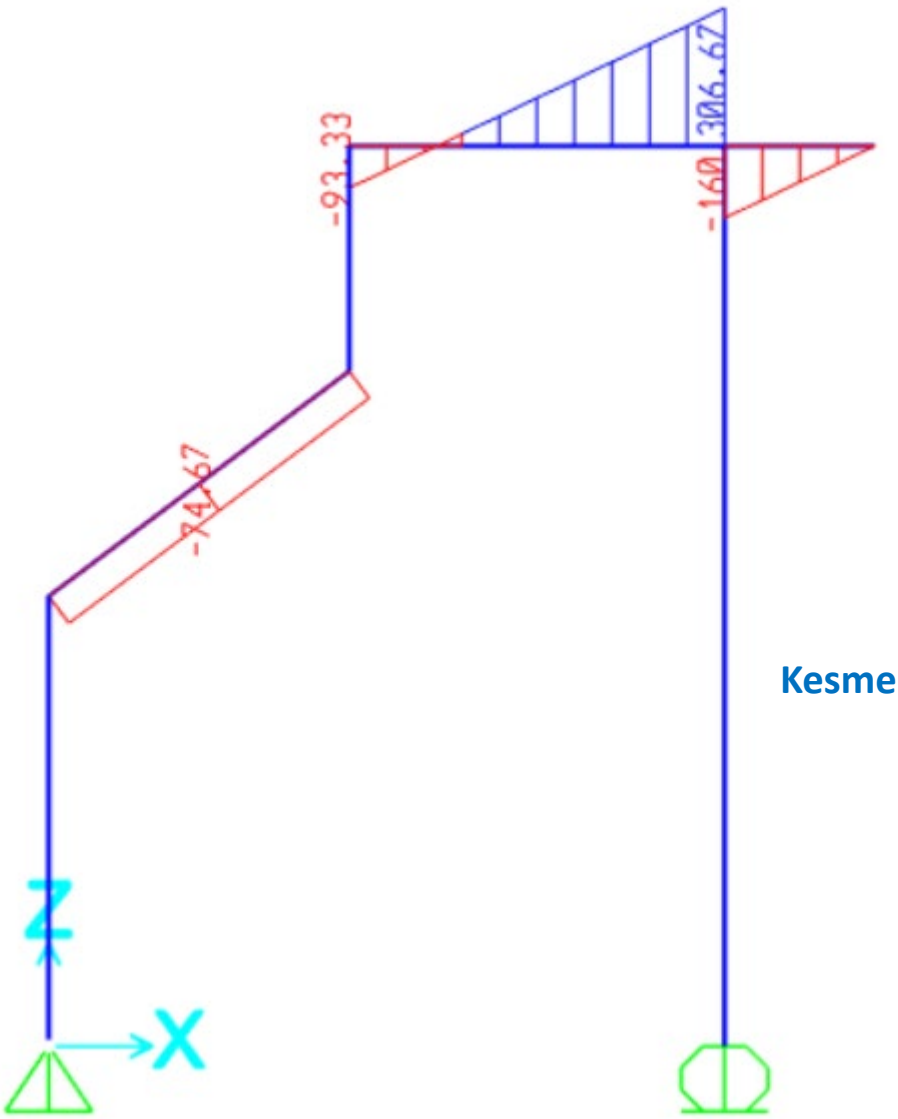
Deflection (2-dir)

0.05383 m
at 1.01042 m
Positive in -2 direction

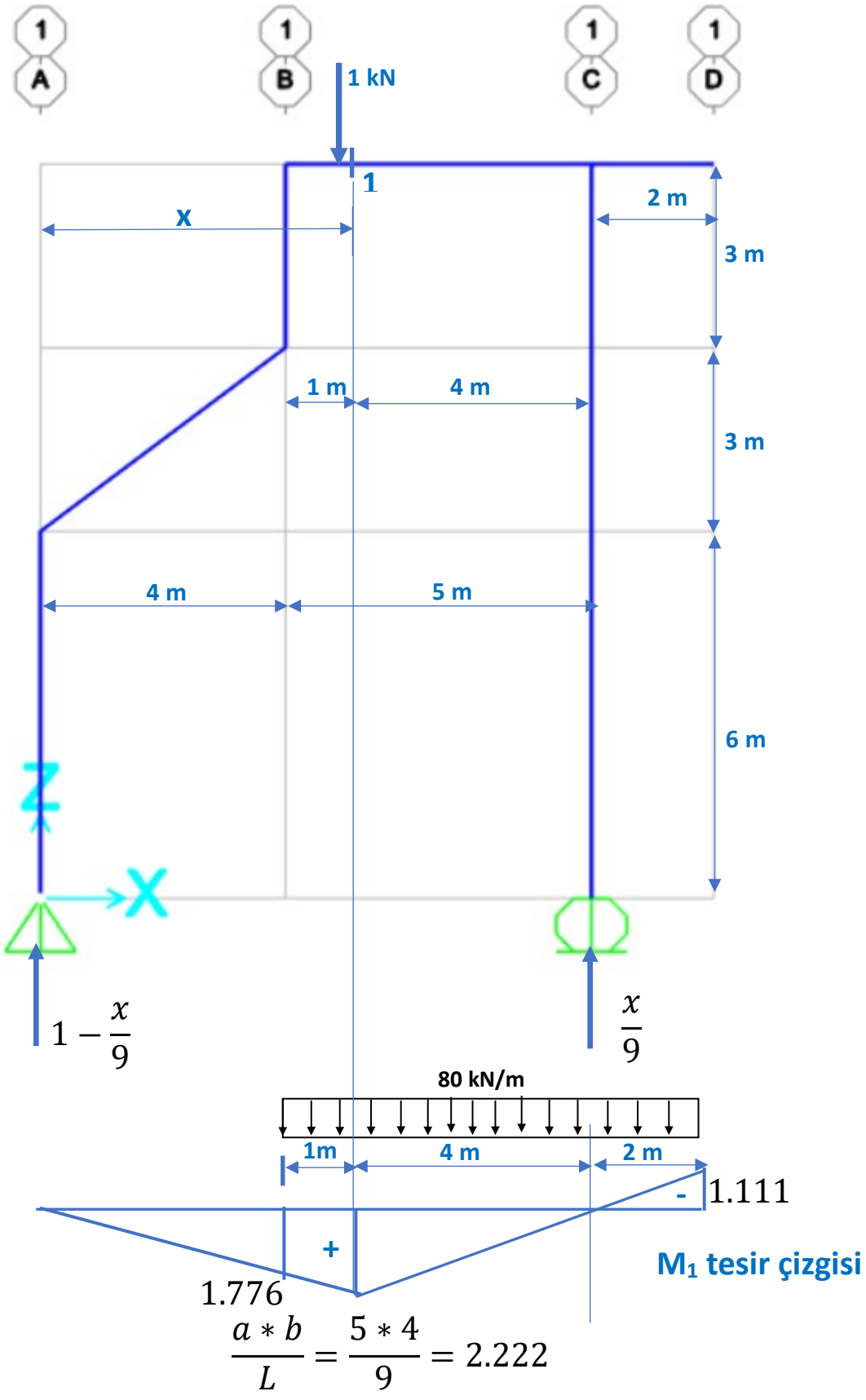
( ) Absolute ( ) Relative to Beam Minimum (•) Relative to Beam Ends



Normal Kuvvet Diyagramı

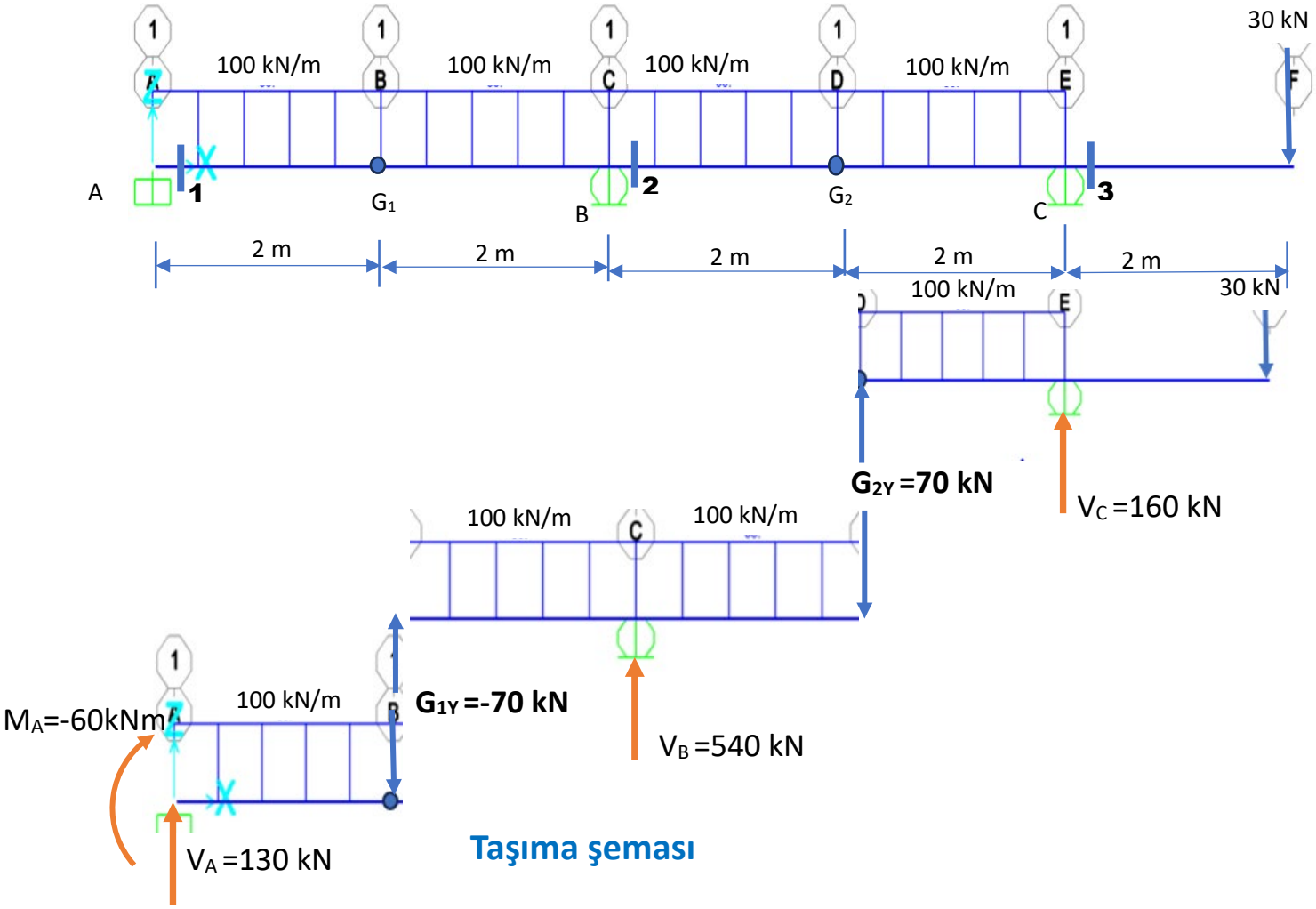


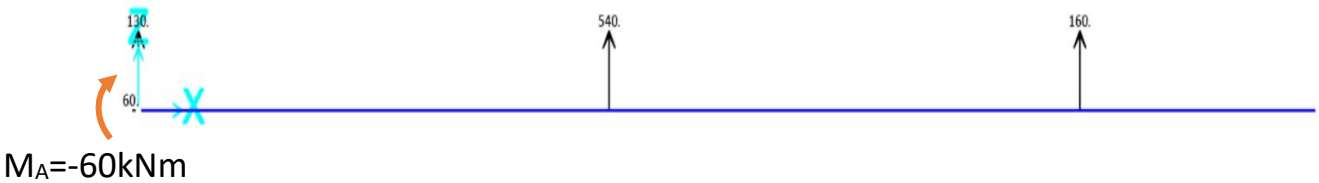
Kesme Kuvvet Diyagramı



$$M_1 = 80 * \left(\frac{2.222 + 1.776}{2} * 1 + \frac{2.222}{2} * 4 - \frac{1.111}{2} * 2\right) = 426.64\ kNm$$

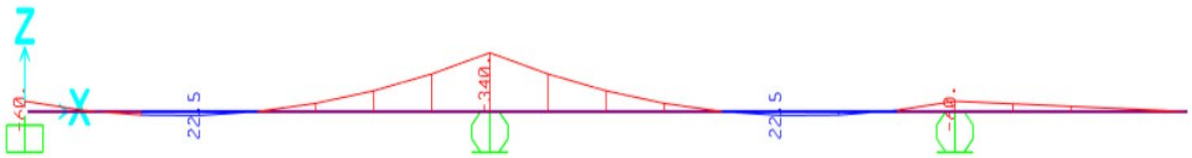
Soru 2 Gerber kirişi çözümü



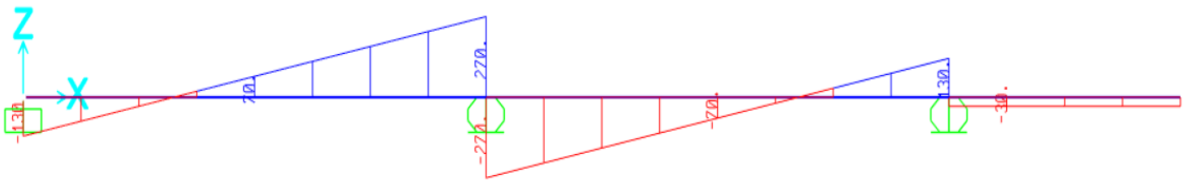


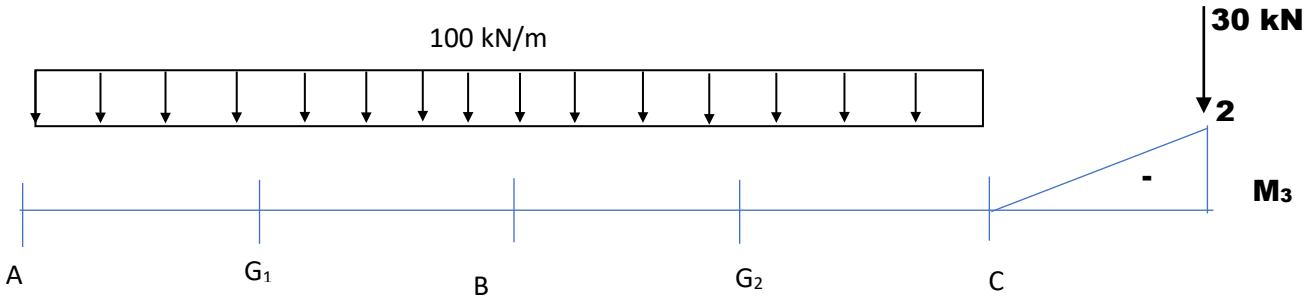
Mesnet Tepkileri

Moment diyagramı

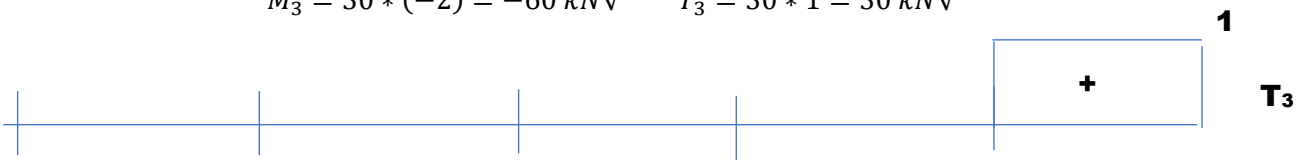


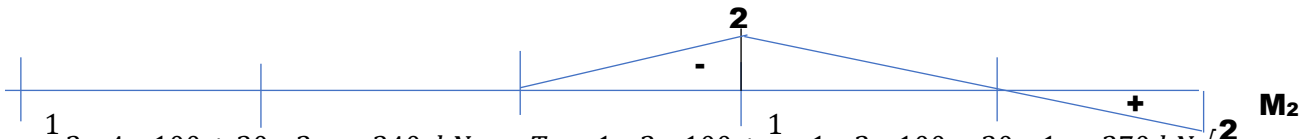
Kesme kuvveti diyagramı



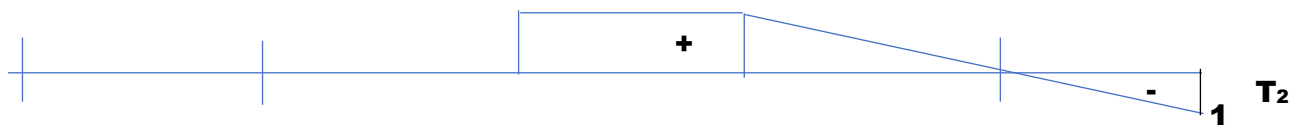


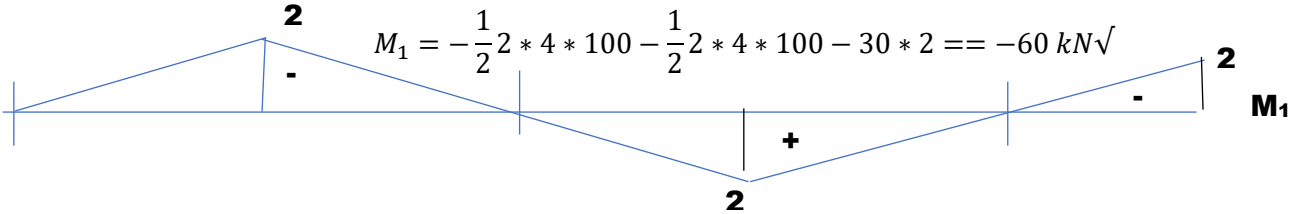
$$M_3 = 30 * (-2) = -60\ kN\surd \qquad T_3 = 30 * 1 = 30\ kN\surd$$



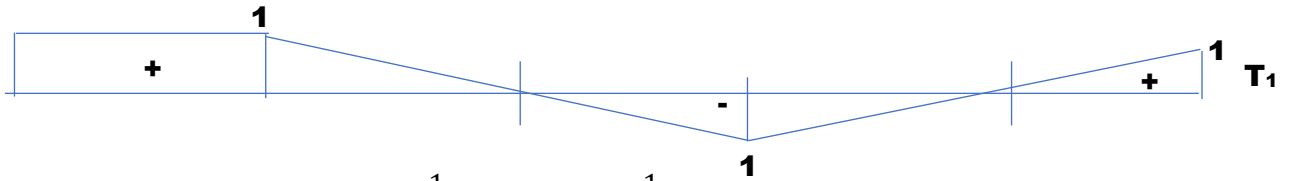


$$M_2 = -\frac{1}{2}2 * 4 * 100 + 30 * 2 = -340\ \ kN \qquad T_2 = 1 * 2 * 100 + \frac{1}{2} * 1 * 2 * 100 - 30 * 1 = \ 270\ kN\surd$$





$$M_1 = -\frac{1}{2}2 * 4 * 100 - \frac{1}{2}2 * 4 * 100 - 30 * 2 == -60\ kN\surd$$



$$T_1 = 1 * 2 * 100 + \frac{1}{2} * 1 * 2 * 100 - \frac{1}{2} * 1 * 4 * 100 + 30 * 1 = \ \ 130\ kN\surd$$