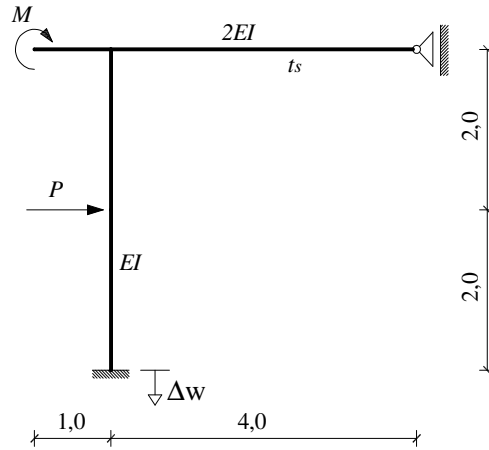


GS 1. - 2. popravni kolokvij (A) – (2009./2010.)

1. (30) Odredite dijagrame momenata savijanja i poprečnih sila.



$$M = 200 \text{ kNm}$$

$$P = 200 \text{ kN}$$

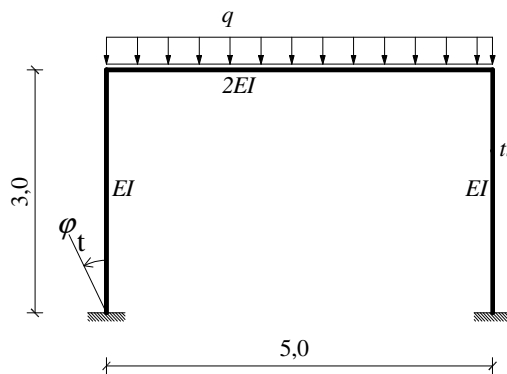
$$t_s = 28^\circ \text{ C}$$

$$\alpha_t = 10^{-5} \text{ K}^{-1}$$

$$\Delta w = 3 \text{ cm}$$

$$E = 3 \cdot 10^7 \text{ kN / m}^2$$

2. (30) Izračunajte koeficijente fleksibilnosti $\delta_{10}, \delta_{20}, \delta_{13}, \delta_{32}$ za odabrani osnovni sustav i napišite jednadžbe kompatibilnosti u općem obliku.



$$q = 34 \text{ kN/m}$$

$$\varphi_t = 0,005$$

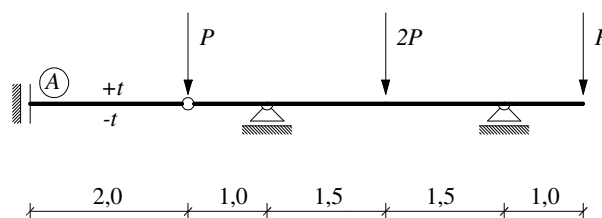
$$b/h = 30/45 \text{ cm}$$

$$E = 3 \cdot 10^7 \text{ kN / m}^2$$

$$t_s = -23^\circ \text{ C}$$

$$\alpha_t = 10^{-5} \text{ K}^{-1}$$

3. (30) Odredite vertikalni pomak točke A.



$$P = 200 \text{ kN}$$

$$+t = 15^\circ \text{ C}$$

$$-t = 15^\circ \text{ C}$$

$$EI = 60000 \text{ kNm}^2$$

$$\alpha_t = 10^{-5} \text{ K}^{-1}$$

$$h = 40 \text{ cm}$$

GS 1. – 2. popravni kolokvij (B) – (2009./2010.)

1. (35) Odredite vertikalni pomak točke T.

stup :

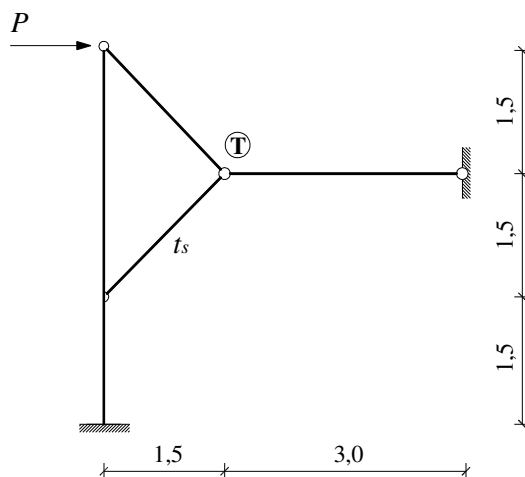
$$b/h = 30/30 \text{ cm}$$

$$E = 3 \times 10^7 \text{ kN/m}^2$$

štapovi :

$$r = 3 \text{ cm}$$

$$E = 2 \times 10^8 \text{ kN/m}^2$$

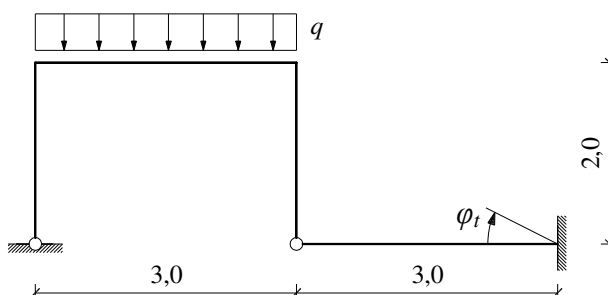


$$P = 100 \text{ kN}$$

$$t_s = 12 \text{ } ^\circ\text{C}$$

$$\alpha_t = 10^{-5} \text{ } ^\circ\text{C}^{-1}$$

2. (30) Nacrtajte M dijagram.



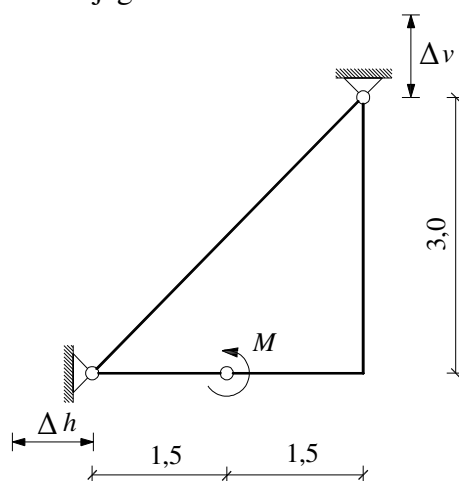
$$q = 20 \text{ kN/m'}$$

$$\varphi_t = 0,002$$

$$b/h = 25/50 \text{ cm}$$

$$E = 3 \times 10^7 \text{ kN/m}^2$$

3. (35) Nacrtajte M , T i N dijagrame.



$$M = 100 \text{ kNm}$$

$$\Delta v = 2,0 \text{ cm}$$

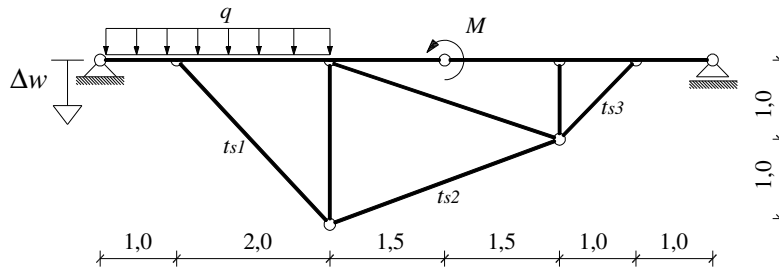
$$\Delta h = 2,5 \text{ cm}$$

$$b/h = 25/25 \text{ cm}$$

$$E = 3 \times 10^7 \text{ kN/m}^2$$

GS 1. - 2. kolokvij za oslobodjenje (A) – (2009./2010.)

1. (35) Odredite dijagrame M , T , N . U obzir uzeti utjecaj sila u štapovima.



$$M = 100 \text{ kN}$$

$$q = 50 \text{ kN/m}$$

$$t_{s1} = -25^\circ \text{ C}$$

$$t_{s2} = -15^\circ \text{ C}$$

$$t_{s3} = 20^\circ \text{ C}$$

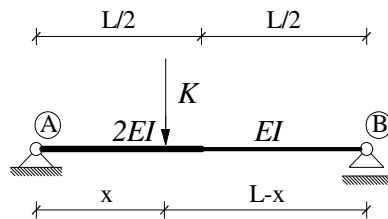
$$\alpha_t = 10^{-5} \text{ K}^{-1}$$

$$\Delta w = 1 \text{ cm}$$

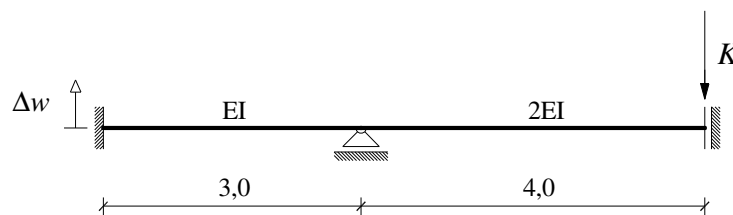
$$E = 3 \cdot 10^7 \text{ kN/m}^2$$

$$b/h = 30/30 \text{ cm}$$

2. (40) Odredite položaj sile K za koji zaokret osi na mjestu točke B poprima najveću vrijednost.



3. (25) Odredite vertikalni pomak hvatišta sile K .



$$E = 3 \cdot 10^7 \text{ kN/m}^2$$

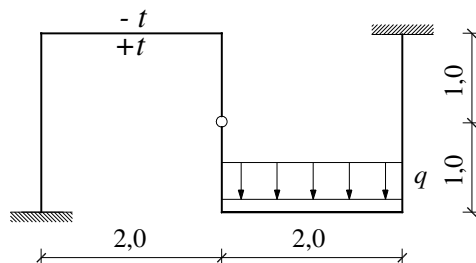
$$K = 100 \text{ kN}$$

$$\Delta w = 2 \text{ cm}$$

$$\frac{b}{h} = \frac{30}{40} \text{ cm}$$

GS 1. - 2. kolokvij za oslobođenje (B) – (2009./2010.)

1. (35) Nacrtajte M , T i N dijagrame.



$$q = 50 \text{ kN/m}$$

$$t = 10 \text{ }^\circ\text{C}$$

$$\alpha_t = 10^{-5} \text{ }^\circ\text{C}^{-1}$$

$$b/h = 25/50 \text{ cm}$$

$$E = 3 \times 10^7 \text{ kN/m}^2$$

2. (35) Odredite horizontalni pomak točke T.

okvir :

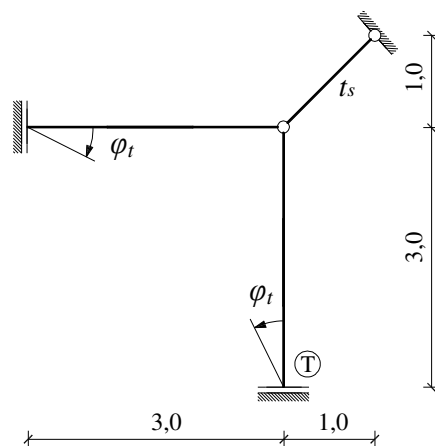
$$b/h = 30/30 \text{ cm}$$

$$E = 3 \times 10^7 \text{ kN/m}^2$$

štap :

$$r = 3 \text{ cm}$$

$$E = 2 \times 10^8 \text{ kN/m}^2$$

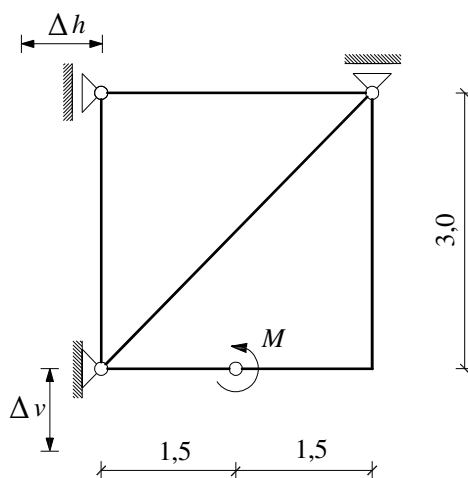


$$t_s = 12 \text{ }^\circ\text{C}$$

$$\alpha_t = 10^{-5} \text{ }^\circ\text{C}^{-1}$$

$$\varphi_t = 0,002$$

3. (30) Nacrtajte M dijagram.



$$M = 100 \text{ kNm}$$

$$\Delta v = 2,5 \text{ cm}$$

$$\Delta h = 3,0 \text{ cm}$$

$$b/h = 25/45 \text{ cm}$$

$$E = 3 \times 10^7 \text{ kN/m}^2$$