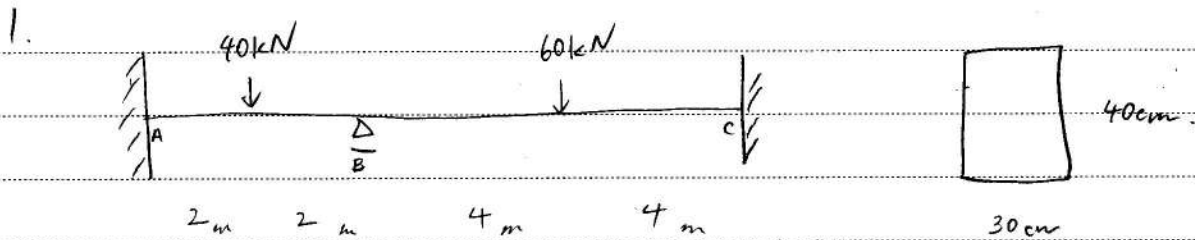


授業科目 構力Ⅲ 学科 \_\_\_\_\_ 年次 \_\_\_\_\_ 学籍番号 \_\_\_\_\_ 氏名 第1回



$$E = 1000 \text{ kN/cm}^2$$

$$I = \frac{30 \times 40^3}{12} = 160000 \text{ cm}^4$$

$$k_1 = \frac{I}{l_{AB}} = \frac{160000}{400} = 400 \text{ cm}^3$$

$$k_2 = \frac{I}{l_{BC}} = \frac{160000}{800} = 200 \text{ cm}^3$$

$$C_{AB} = -\frac{1}{8} \times 40 \times 400 = -2000 \text{ kNcm}$$

$$C_{BA} = \frac{1}{8} \times 40 \times 400 = 2000 \text{ kNcm}$$

$$C_{BC} = -\frac{1}{8} \times 60 \times 800 = -6000 \text{ kNcm}$$

$$C_{CB} = \frac{1}{8} \times 60 \times 800 = 6000 \text{ kNcm}$$

$$M_{AB} = 2EK_1(2\theta_A + \theta_B - 3R) + C_{AB}$$

$$M_{BA} = 2EK_1(2\theta_B + \theta_A - 3R) + C_{BA}$$

$$M_{BC} = 2EK_2(2\theta_B + \theta_C - 3R) + C_{BC}$$

$$M_{CB} = 2EK_2(2\theta_C + \theta_B - 3R) + C_{CB}$$

$$\sum_B = 0 \text{ (}\times\text{)}$$

$$M_{BA} + M_{BC} = 2 \cdot 1000 \cdot 400 \cdot 2\theta_B + 2000 + 2 \cdot 1000 \cdot 200 \cdot 2 \cdot \theta_B - 6000 = 0$$

$$2400000 \theta_B = 4000$$

$$\theta_B = \frac{1}{600} = 1.67 \times 10^{-3}$$

$$M_{AB} = -666.7 \text{ kNcm} = -6.67 \text{ kNm}$$

$$M_{BA} = 4666.6 \text{ kNcm} = 46.7 \text{ kNm}$$

$$M_{BC} = -4666.6 \text{ kNcm} = -46.7 \text{ kNm}$$

$$M_{CB} = 6666.6 \text{ kNcm} = 66.7 \text{ kNm}$$

1600000

800000

2400000

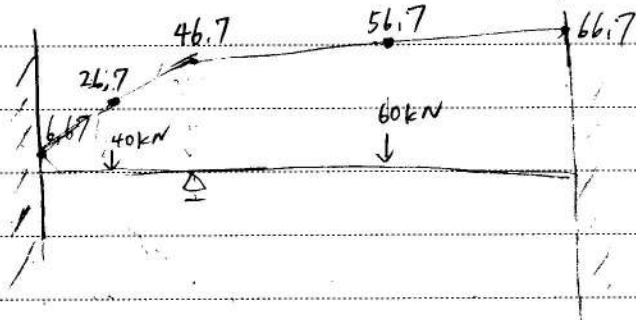
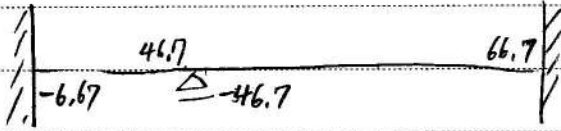
試 験 用 紙 ( 年 月 日 )

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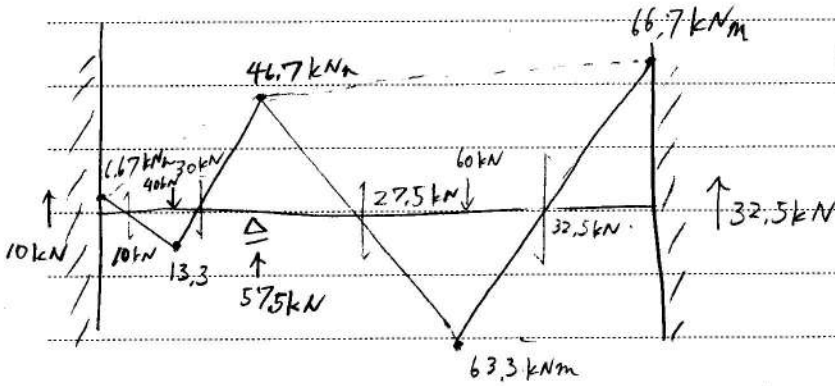
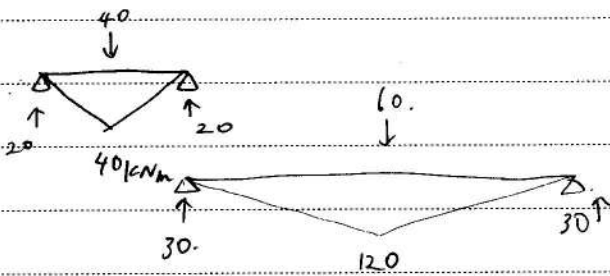
$$Z = \frac{bd^2}{6} = 8000 \text{ cm}^3$$

$$\sigma = \frac{M}{Z} = \frac{6670}{8000}$$

$$= 0.834 \text{ kN/cm}^2 > 0.6 \text{ kN/cm}^2$$



$\sigma > \sigma_{NG}$



変形

