

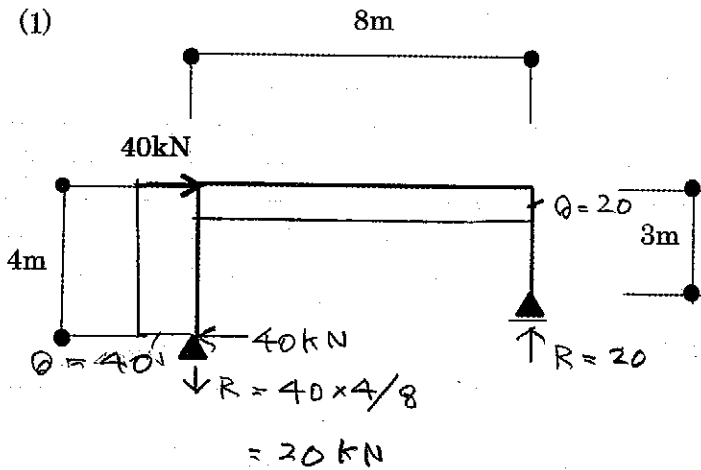
問題2 解答例1)

学識番号

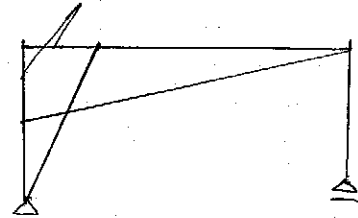
氏名

以下に示す静定ラーメンの反力を求め、曲げモーメント図を描きなさい。合計 11 題

(1)



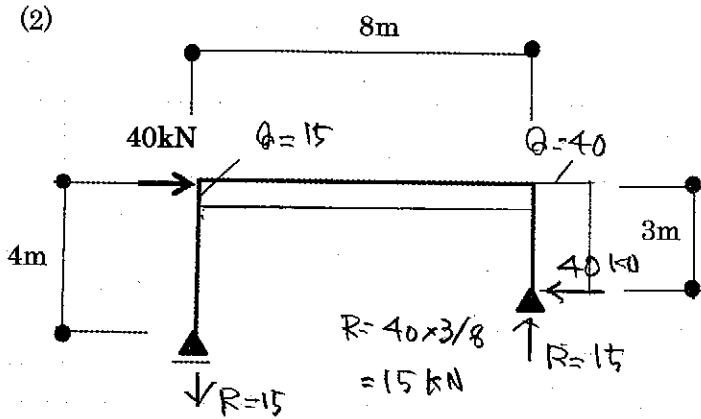
$M = 40 \times 4 = 160 \text{ kN}\cdot\text{m}$



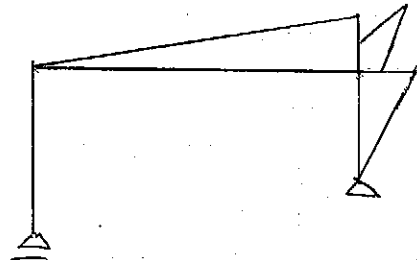
M (kN·m)

反力及 Q (kN)

(2)



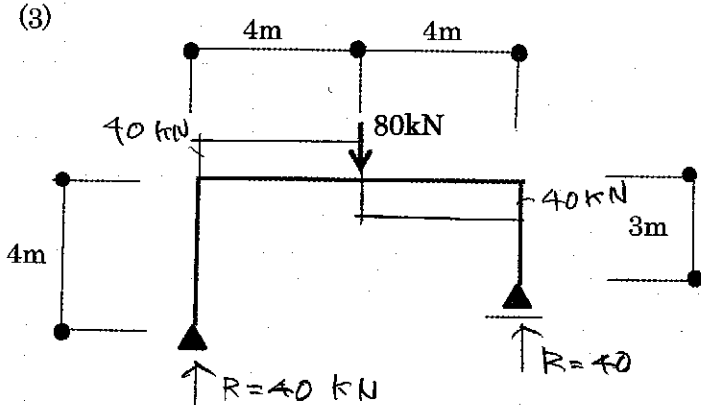
$M = 40 \times 3 = 120 \text{ kN}\cdot\text{m}$



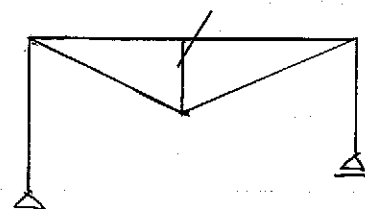
M (kN·m)

反力及 Q (kN)

(3)



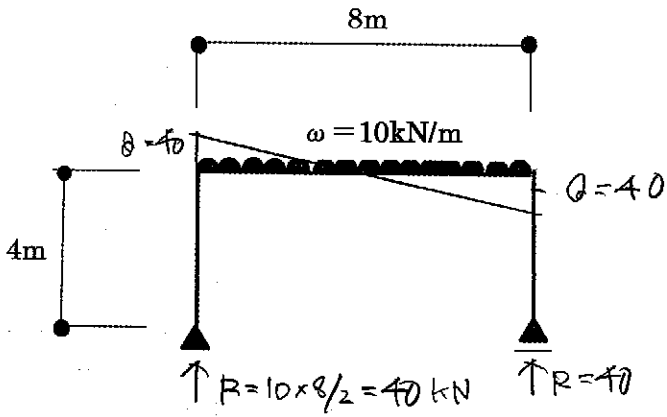
$M = 40 \times 4 = 160 \text{ kN}\cdot\text{m}$



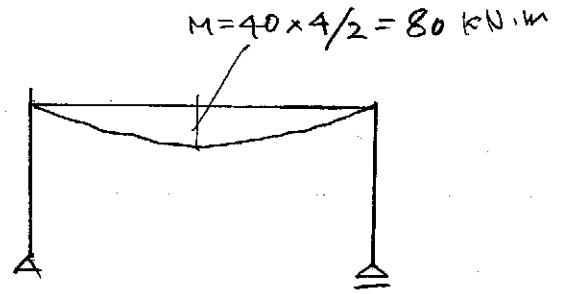
M (kN·m)

反力及 Q (kN)

(4)

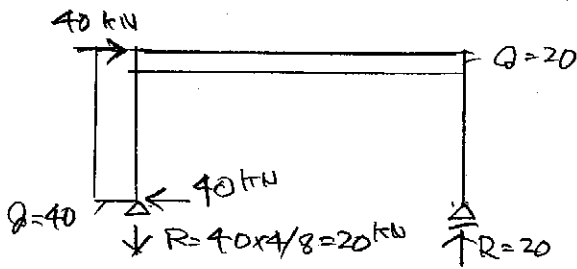
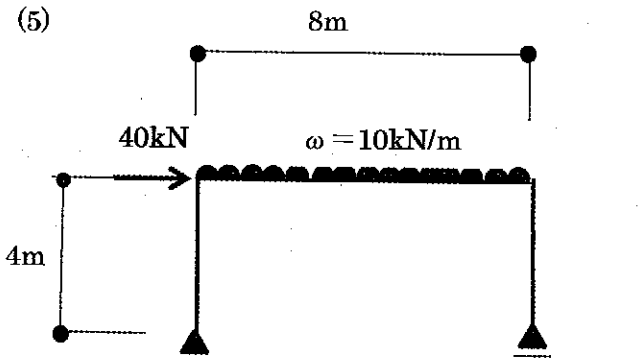


反力及内力图 (kN)

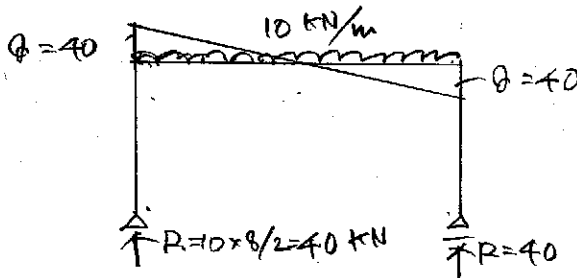
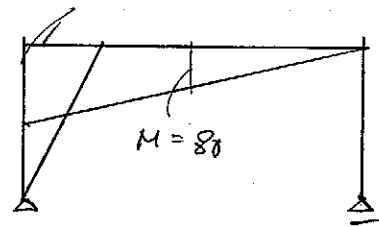


M图 (kN.m)

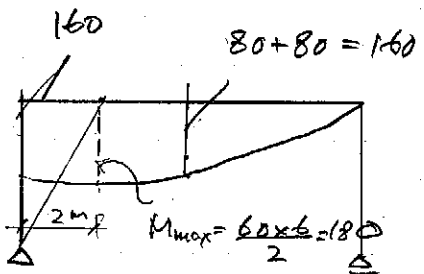
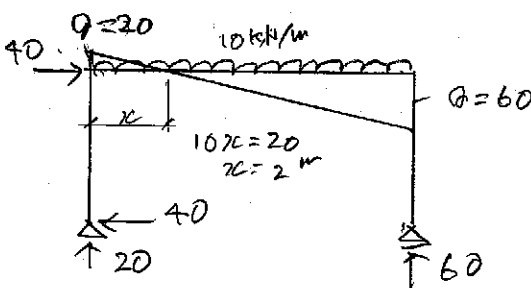
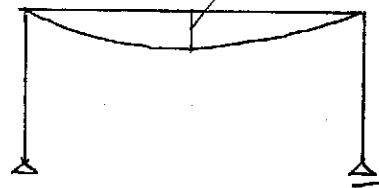
(5)



$M = 40 \times 4 = 160 \text{ kN.m}$



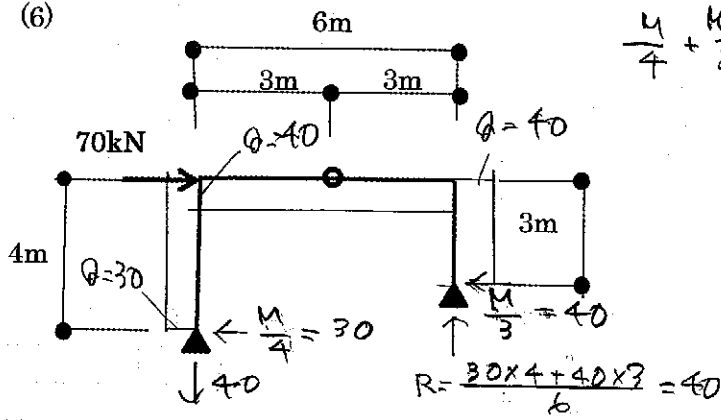
$M = 40 \times 4 / 2 = 80$



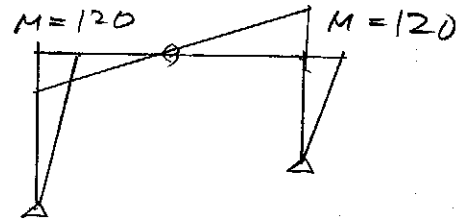
反力及内力图 (kN)

M图 (kN.m)

(6)



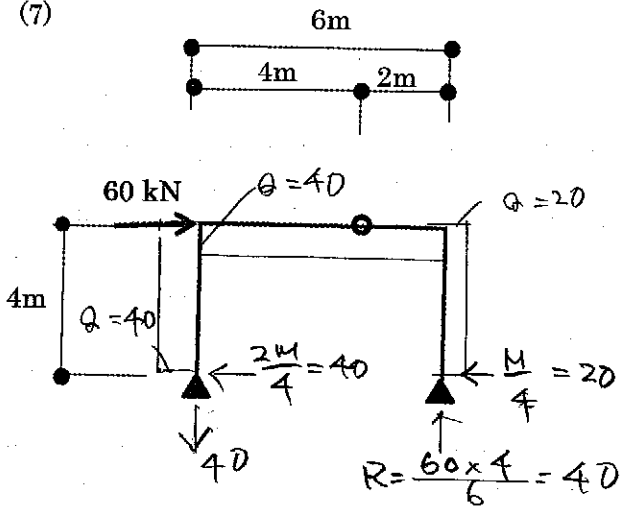
$$\frac{M}{4} + \frac{M}{3} = 70 \implies M = 120 \text{ kN}\cdot\text{m}$$



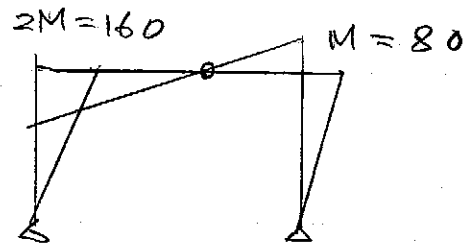
M (kN·m)

反力及V、Q (kN)

(7)



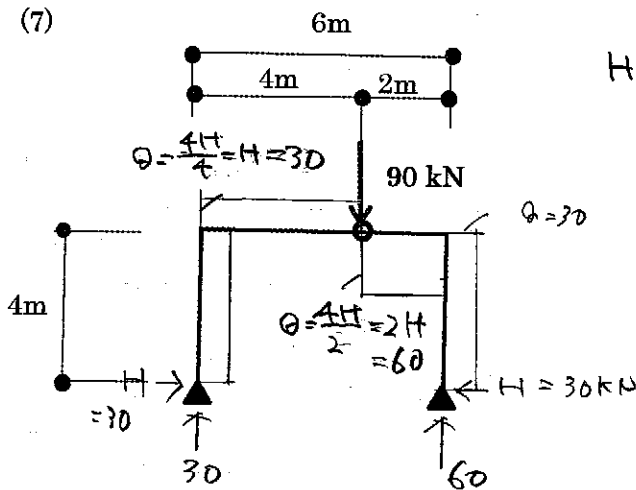
$$\frac{2M}{4} + \frac{M}{4} = 60 \implies M = 80 \text{ kN}\cdot\text{m}$$



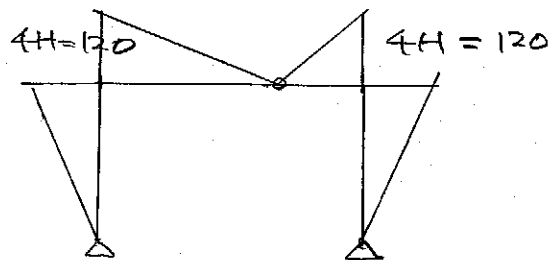
M (kN·m)

反力及V、Q (kN)

(7)



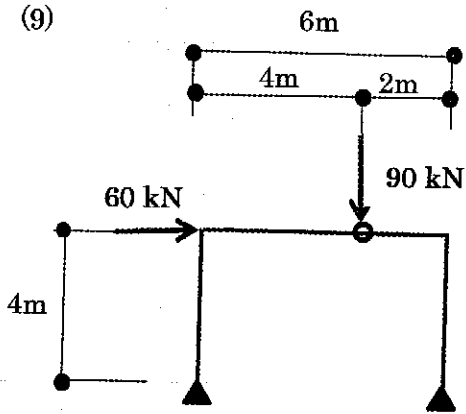
$$H + 2H = 90 \implies H = 30$$



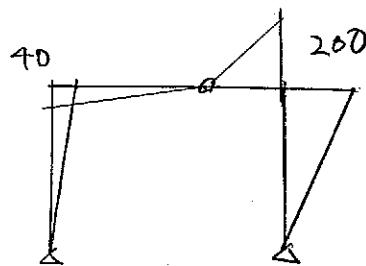
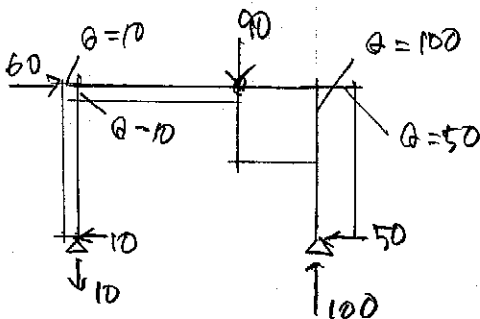
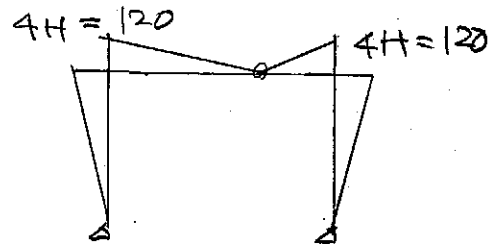
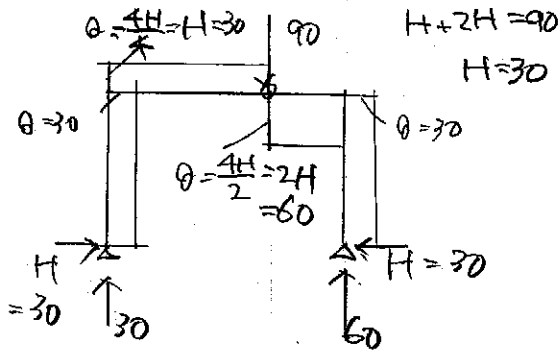
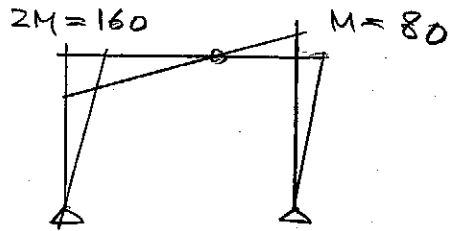
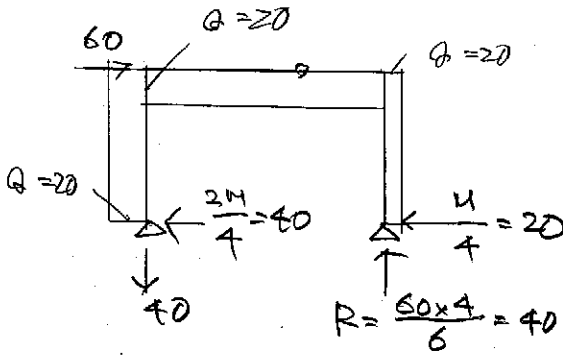
M (kN·m)

反力及V、Q (kN)

(9)



$$\frac{2M}{4} + \frac{M}{4} = 60 \quad M = 80 \text{ kN.m}$$



Reaction & Shear Force (kN)

M (kN.m)

