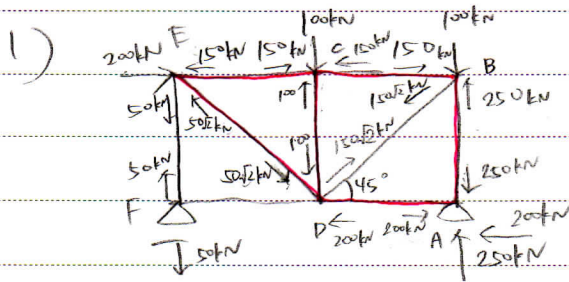


授業科目 \_\_\_\_\_ 学科 \_\_\_\_\_ 年次 \_\_\_\_\_ 学籍番号 \_\_\_\_\_ 氏名 \_\_\_\_\_



$$200 \times 1 + 100 \times 1 + 100 \times 2 - V_B \times 2 = 0$$

$$V_B = 250 \text{ kN}$$

A  $\sum F_y = 250 - N_1 = 0 \quad \therefore N_1 = 250 \text{ kN}$

$\sum F_x = 200 - N_2 = 0 \quad \therefore N_2 = 200 \text{ kN}$

B  $\sum F_y = 100 - 250 + N_3 \times \frac{1}{\sqrt{2}} = 0 \quad \therefore N_3 = 150\sqrt{2} \text{ kN}$

$\sum F_x = 150\sqrt{2} \times \frac{1}{\sqrt{2}} - N_4 = 150 \quad \therefore N_4 = 150 \text{ kN}$

C  $\sum F_y = 100 - N_5 = 0 \quad \therefore N_5 = 100 \text{ kN}$

$\sum F_x = 150 - N_6 = 0 \quad \therefore N_6 = 150 \text{ kN}$

D  $\sum F_y = 100 + N_7 \times \frac{1}{\sqrt{2}} - 150\sqrt{2} \times \frac{1}{\sqrt{2}} = 0 \quad \therefore N_7 = 50\sqrt{2} \text{ kN}$

$\sum F_x = 50\sqrt{2} \times \frac{1}{\sqrt{2}} + 150\sqrt{2} \times \frac{1}{\sqrt{2}} - 200 + N_8 = 0 \quad \therefore N_8 = 0$

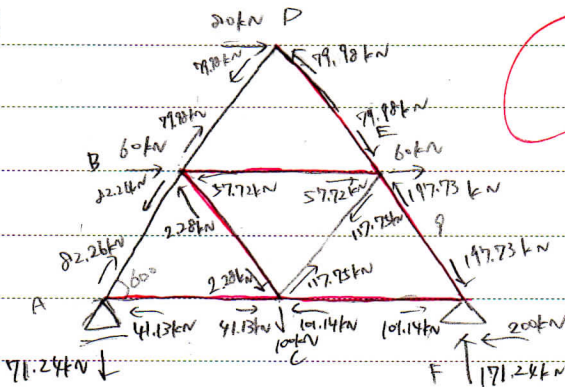
E  $\sum F_y = 50\sqrt{2} \times \frac{1}{\sqrt{2}} - N_9 = 0 \quad \therefore N_9 = 50$



授業科目 \_\_\_\_\_ 学科 \_\_\_\_\_ 年次 \_\_\_\_\_ 学籍番号 \_\_\_\_\_ 氏名 \_\_\_\_\_

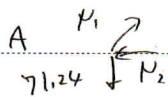
2)

31.99  
17.71  
(57.71)  
58.273



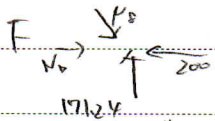
$$60 \times \frac{\sqrt{3}}{2} + 200 \times \sqrt{3} + 60 \times \frac{\sqrt{3}}{2} - V_B \times 2 = 0$$

$$V_B = 171.24 \text{ kN}$$



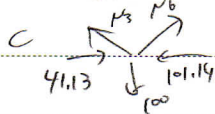
$$\sum F_y = N_1 \times \frac{\sqrt{3}}{2} - 71.24 = 0 \quad \therefore N_1 = 82.26 \text{ kN}$$

$$\sum F_x = N_2 - 82.26 \times \frac{1}{2} = 0 \quad \therefore N_2 = 41.13 \text{ kN}$$



$$\sum F_y = N_3 \times \frac{\sqrt{3}}{2} - 171.24 = 0 \quad \therefore N_3 = 197.73 \text{ kN}$$

$$\sum F_x = N_4 + 197.73 \times \frac{1}{2} - 200 = 0 \quad \therefore N_4 = 101.14 \text{ kN}$$



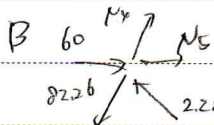
$$\sum F_y = N_3 \times \frac{\sqrt{3}}{2} + M_6 \times \frac{\sqrt{3}}{2} - 100 = 0 \quad \therefore N_3 + M_6 = 115.47$$

$$\sum F_x = N_3 \times \frac{1}{2} + 101.14 - M_6 \times \frac{1}{2} - 41.13 = 0 \quad \therefore N_3 - M_6 = -120.02$$

29.99

$$\therefore N_3 = -2.28 \text{ kN} \quad M_6 = 117.75 \text{ kN}$$

41.13



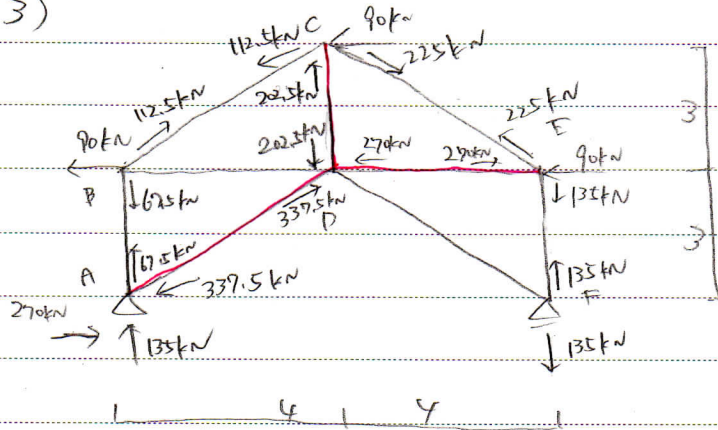
$$\sum F_y = M_4 \times \frac{\sqrt{3}}{2} + 2.28 \times \frac{\sqrt{3}}{2} - 82.26 \times \frac{\sqrt{3}}{2} = 0 \quad \therefore M_4 = 79.98 \text{ kN}$$

1.14

$$\sum F_x = 60 + 79.98 \times \frac{1}{2} + M_5 - 82.26 \times \frac{1}{2} - 2.28 \times \frac{1}{2} = 0 \quad \therefore M_5 = -57.72 \text{ kN}$$

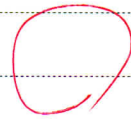
42.27

3)



$$90 \times 3 + 90 \times 6 + 90 \times 3 + V_B \times 8 = 0$$

$$V_B = -135$$



67.5

Node A:  $\sum F_x = 270 - N_2 \times \frac{4}{5} = 0 \Rightarrow N_2 = 337.5 \text{ kN}$   
 $\sum F_y = N_1 + 337.5 \times \frac{3}{5} - 135 = 0 \Rightarrow N_1 = -67.5$

Node F:  $\sum F_x = N_4 \times \frac{4}{5} = 0 \Rightarrow N_4 = 0 \text{ kN}$   
 $\sum F_y = N_3 - 135 = 0 \Rightarrow N_3 = 135 \text{ kN}$

Node B:  $\sum F_y = N_5 \times \frac{3}{5} - 67.5 = 0 \Rightarrow N_5 = 112.5 \text{ kN}$   
 $\sum F_x = 112.5 \times \frac{4}{5} + N_6 - 90 = 0 \Rightarrow N_6 = 6 \text{ kN}$

Node D:  $\sum F_y = N_7 - 337.5 \times \frac{3}{5} = 0 \Rightarrow N_7 = 202.5 \text{ kN}$   
 $\sum F_x = 337.5 \times \frac{4}{5} - N_8 = 0 \Rightarrow N_8 = 270 \text{ kN}$

Node E:  $\sum F_y = N_9 \times \frac{3}{5} - 135 = 0 \Rightarrow N_9 = 225 \text{ kN}$

67.5  
151.5