

- 해석 절차 :

STEP 1. 미지력을 파악한다

지점 반력 : F_{Ax} , F_{Ay} , F_{Cy}

부재력 : F_{AB} , F_{AC} , F_{BC}

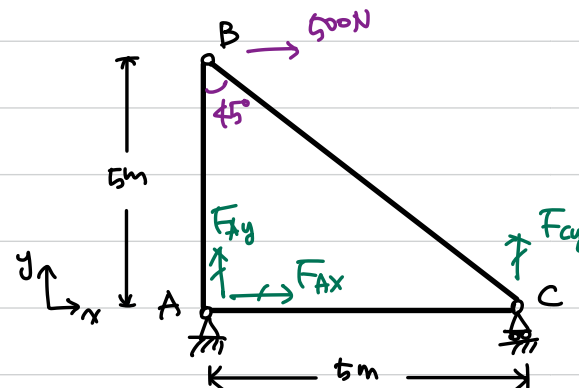
STEP 2. 평형방정식을 이용하여 전체 구조물의 지점 반력을 산정한다

$$\oplus \rightarrow \sum F_x = 0; \quad F_{Ax} + 500 = 0 \quad \Rightarrow F_{Ax} = -500 \text{ N } (\leftarrow)$$

$$\oplus \uparrow \sum F_y = 0; \quad F_{Ay} + F_{Cy} = 0 \quad \Rightarrow F_{Ay} = -F_{Cy} = -500 \text{ N } (\downarrow)$$

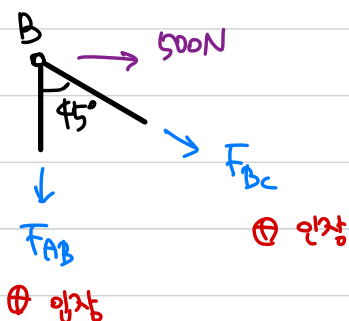
$$\oplus \curvearrowright \sum M_A = 0; \quad F_{Cy} \times 5 - 500 \times 5 = 0 \quad \Rightarrow F_{Cy} = 500 \text{ N } (\uparrow)$$

$$\therefore F_{Ax} = -500 \text{ N } (\leftarrow), \quad F_{Ay} = -500 \text{ N } (\downarrow), \quad F_{Cy} = 500 \text{ N } (\uparrow)$$



STEP 3. 각 절점에 대한 평형방정식 ($\sum V = 0$, $\sum H = 0$) 을 이용해 미지의 부재력을 산정한다

① 절점 B

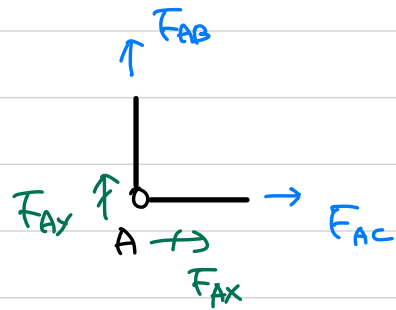


$$\begin{cases} \sum F_x = 0; & F_{BC} \sin 45^\circ + 500 = 0 \\ \sum F_y = 0; & -F_{AB} - F_{BC} \cos 45^\circ = 0 \end{cases}$$

$$\therefore F_{BC} = -\frac{500}{\sin 45^\circ} = -\frac{500}{\frac{1}{\sqrt{2}}} = -500\sqrt{2} \text{ N } (\text{압착})$$

$$F_{AB} = -F_{BC} \cos 45^\circ = 500\sqrt{2} \times \cos 45^\circ = 500\sqrt{2} \times \frac{1}{\sqrt{2}} = 500 \text{ N } (\text{인장})$$

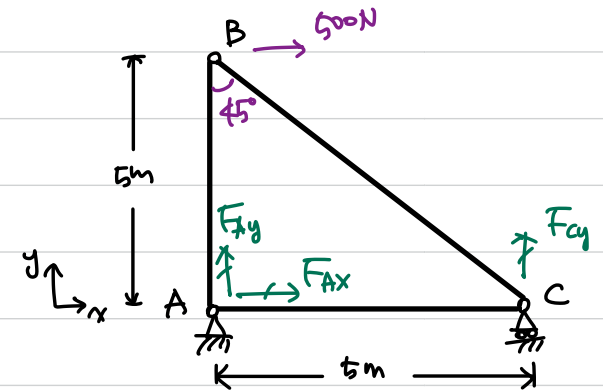
② 228 A



$$F_{AB} = 500 \text{ N (up)}$$

$$F_{Ax} = -500 \text{ N (left)} \quad F_{Ay} = -500 \text{ N (down)}$$

$$\begin{cases} \sum F_x = 0; & F_{Ax} + F_{AC} = 0 \quad \Rightarrow F_{AC} = -F_{Ax} = 500 \text{ N (right)} \\ \sum F_y = 0; & F_{Ay} + F_{AB} = 0 \\ & -500 + 500 = 0 \quad (\text{checked}) \end{cases}$$



ANSWER)

