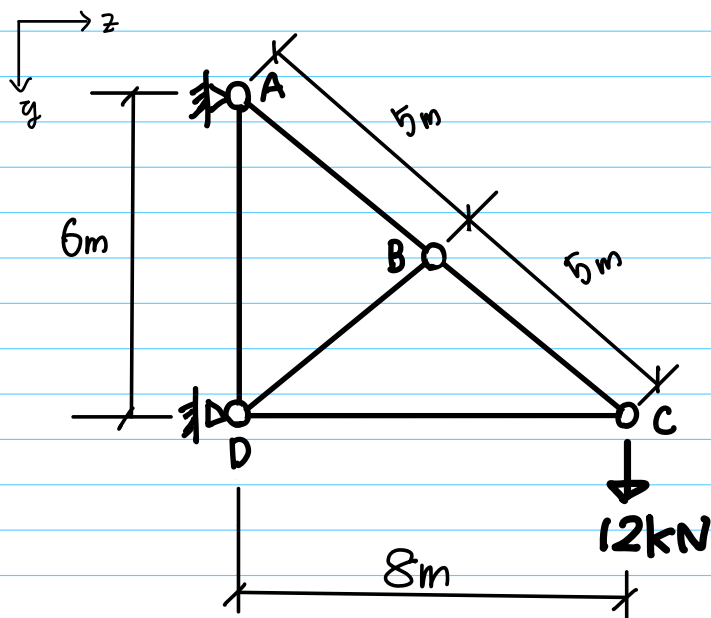
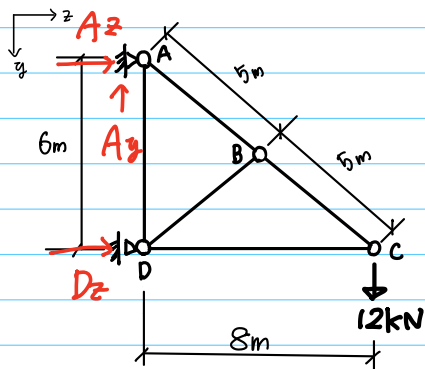


## 第4回小テスト 解答



Step 1: 点Aと点Dの反力を求める



$$\sum F_z: A_z + D_z = 0$$

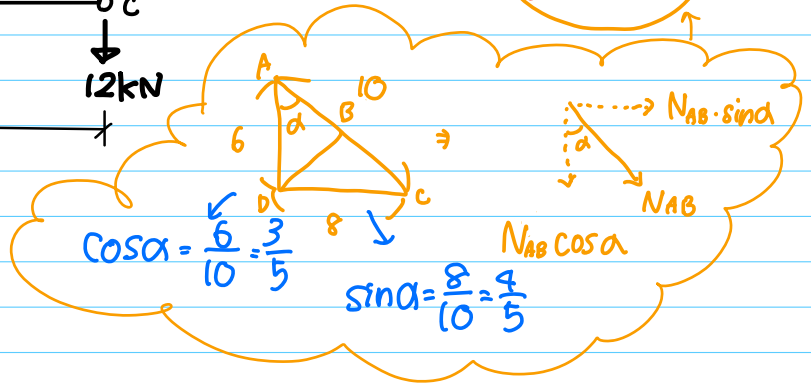
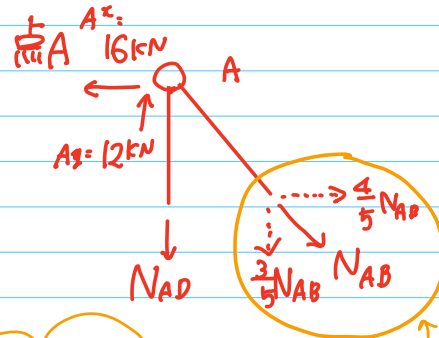
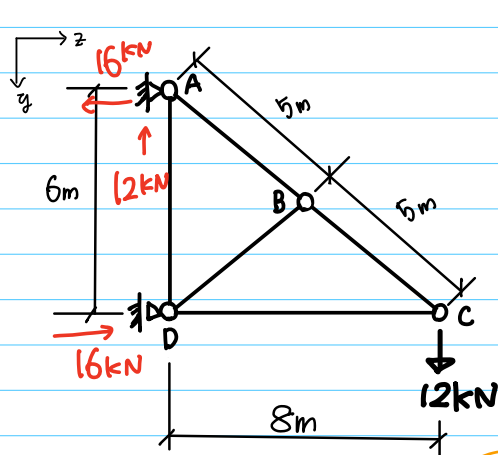
$$\sum F_y: A_y - 12 \text{ kN} = 0$$

$$A_y = 12 \text{ kN}$$

$$\sum M_z: -A_z \cdot 6 \text{ m} - 12 \text{ kN} \cdot 8 \text{ m} = 0$$

$$A_z = -16 \text{ kN}$$

$$\therefore D_z = 16 \text{ kN}$$



$$\sum \overset{Az}{\rightarrow} : -16 \text{ kN} + \frac{4}{5} N_{AD} = 0$$

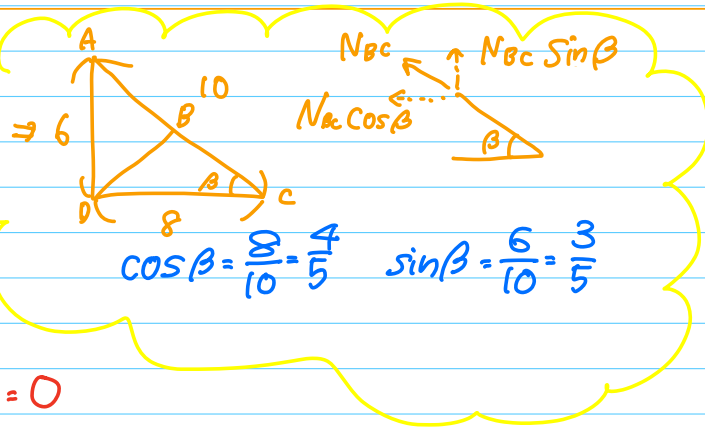
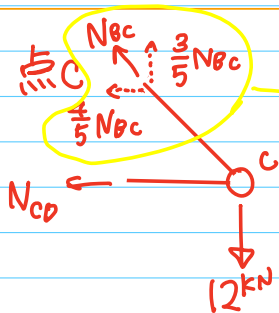
$$\frac{4}{5} N_{AD} = 16 \text{ kN}$$

$$N_{AD} = 16 \cdot \frac{5}{4} = \underline{20 \text{ kN (Tension)}}$$

$$\sum \overset{Ay}{\uparrow} : 12 \text{ kN} - N_{AD} - \frac{3}{5} N_{AB} = 0$$

$$N_{AD} = -12 + \frac{3}{5} \cdot 20 = 0$$

$$\therefore \underline{N_{AD} = 0 \text{ kN}}$$



$$\sum \uparrow : \frac{3}{5} N_{BC} - 12 \text{ kN} = 0$$

$$N_{BC} = 12 \text{ kN} \cdot \frac{5}{3} = \underline{20 \text{ kN (Tension)}} \quad \therefore N_{BC} = N_{BC} \text{ from } \overset{B}{A}!$$

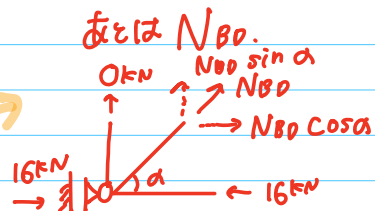
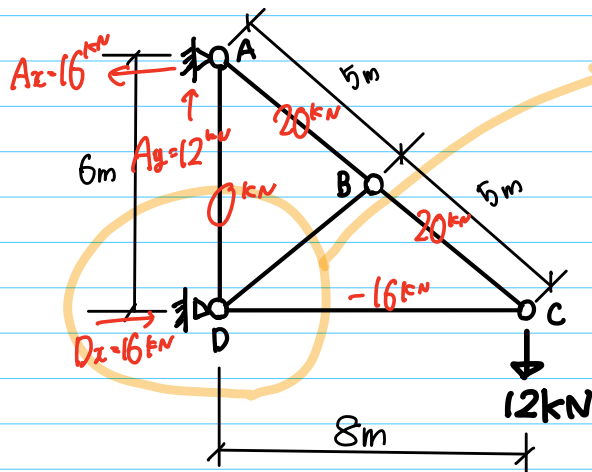
$$\rightarrow \sum: -\frac{4}{5}N_{BC} - N_{CD} = 0$$

$$-\frac{4}{5} \cdot 20 - N_{CD} = 0$$

$$\therefore N_{CD} = -16 \text{ kN}$$

$$= 16 \text{ kN (Compression)}$$

ここまで



$$\uparrow \sum: N_{BD} \cdot \sin \alpha = 0$$

$\sin \alpha$  は  $0^\circ$  じゃないので

$$N_{BD} = 0$$

まとめ

$$N_{AB} = 20 \text{ kN (Tension)}$$

$$N_{BC} = 20 \text{ kN (Tension)}$$

$$N_{AD} = 0 \text{ kN}$$

$$N_{BD} = 0 \text{ kN}$$

$$N_{CD} = -16 \text{ kN (Compression)}$$