Quiz #8. A compound truss is loaded as shown. Determine the forces in members *CD*, *DE*, and *AH*.

3.5 kN

4 m   4 m   4 m

C   *D*   14 kN

3 m   4

B   3

2.6 kN   *H*   *J*   *E*

5 m

G

A   *F*

3.5 kN

F_{CD} *D* 14 kN

F_{CI} *I*   4
3

F_{BH} *H*   *J*   *E*

F_{AB} *G* F_{FJ} F_{EF}

A F_{FG}

A_y

②
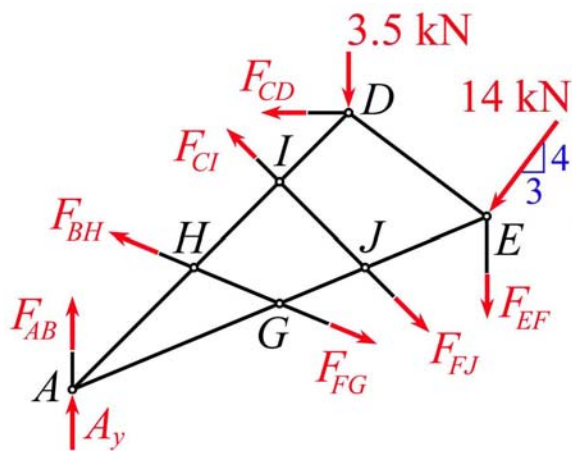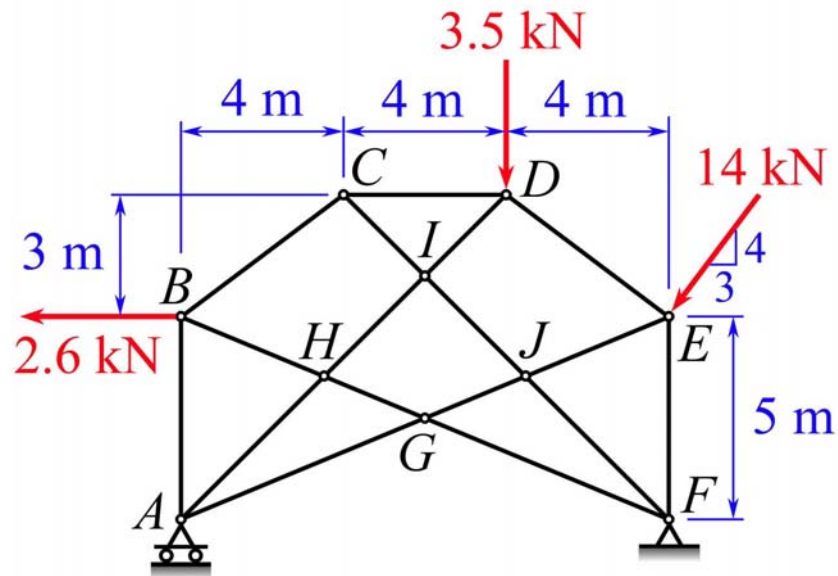
By *X-joint properties* and *rigid-body principle*, we may neglect the pair of forces F_{BH} and F_{FG},

as well as the pair of forces F_{CI} and F_{FJ}, in the *FBD*. ①

$F_{CD} = 8.4 \text{ kN } (C)$ ②

3.5 kN

8.4 kN   *D*

F_{DI} 1   3 F_{DE}
1   4   ①
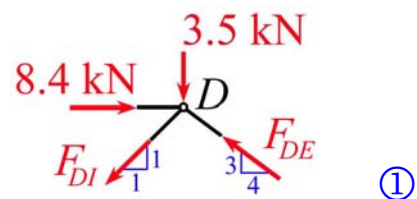
$F_{DE} = 8.5 \text{ kN } (C)$ ②

$F_{AH} = F_{DI}$

$F_{AH} = 2.26 \text{ kN } (T)$ ②