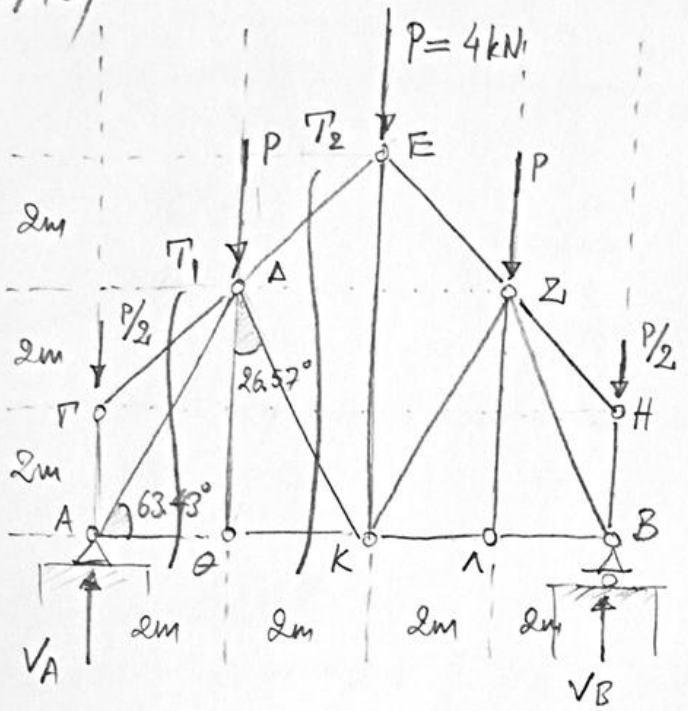
(3/10)

$\sin 63.43° = 0.894$, $\sin 26.57° = 0.447$
$\cos 63.43° = 0.447$, $\cos 26.57° = 0.894$



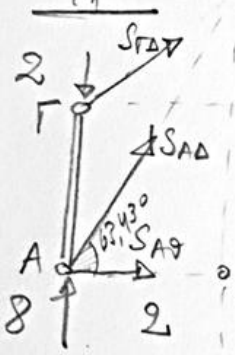
Αντίδρ. στηρίξεων

$\left.\begin{matrix}\Sigma F_y = 0 \\ \Sigma M = 0\end{matrix}\right\} \Rightarrow V_A = V_B = \frac{4P}{2} = 2P = 8\,kN$

Δυνάμεις ράβδων

- Συμμετρία
- $\boxed{S_{A\Theta} \equiv S_{\Gamma Z} = 0\,kN}$

T_1



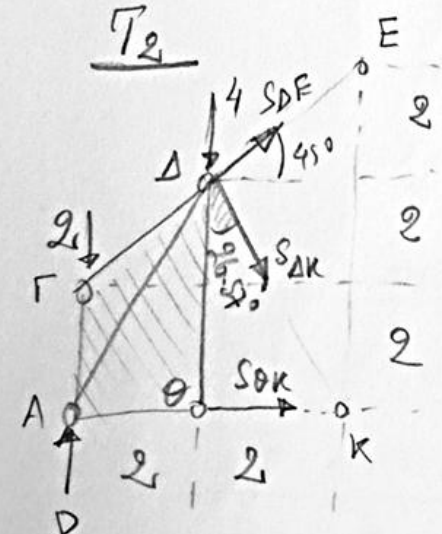
$\curvearrowleft \Sigma M_\Delta = 0 \Rightarrow 4 \times S_{A\Theta} - 2(8-2) = 0 \Rightarrow \boxed{S_{A\Theta} = 3\,kN}$ Εφ

$\curvearrowleft \Sigma M_A = 0 \Rightarrow \boxed{S_{\Gamma\Delta} = 0\,kN}$

$\uparrow \Sigma F_y = 0 \Rightarrow S_{A\Delta} \sin 63.43° + 8 - 2 = 0 \Rightarrow \boxed{S_{A\Delta} = -6.71\,kN}$ Θλ

Κόμβος Γ $\Rightarrow \boxed{S_{A\Gamma} = -2\,kN}$ Θλ

T_2



Κατηφορά από κόμβο Θ: $\boxed{S_{\Theta K} \equiv S_{A\Theta} = 3\,kN}$ Εφ

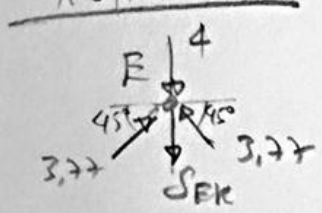
$\curvearrowleft \Sigma M_K = 0 \Rightarrow 4 \times 2 - 4 \times 8 + 2 \times 4 - 2 \times \frac{\sqrt{2}}{2} S_{\Delta E} - 4 \times \frac{\sqrt{2}}{2} S_{\Delta E} = 0$

$\Rightarrow \boxed{S_{\Delta E} = \frac{-16}{3\sqrt{2}} = -3.77\,kN}$ Θλ

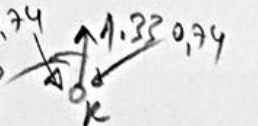
$\uparrow \Sigma F_y = 0 \Rightarrow 8 - 2 - 4 + \frac{\sqrt{2}}{2} S_{\Delta E} - S_{\Delta K} \cos 26.57° = 0 \Rightarrow$

$\Rightarrow \boxed{S_{\Delta K} = \left[2 + \frac{\sqrt{2}}{2}(-3.77)\right] / 0.894 = -0.74\,kN}$ Θλ

Κόμβος Ε



$\uparrow \Sigma F_y = 0 \Rightarrow 2 \times 3.77 \times \frac{\sqrt{2}}{2} - 4 - S_{EK} = 0 \Rightarrow \boxed{S_{EK} = 1.33\,kN}$ Εφ

Έλεγχος στον κόμβο Κ

$\Sigma F_y = 1.33 - 2 \times 0.74 \times 0.894 = 0$ ✓ 26.57°