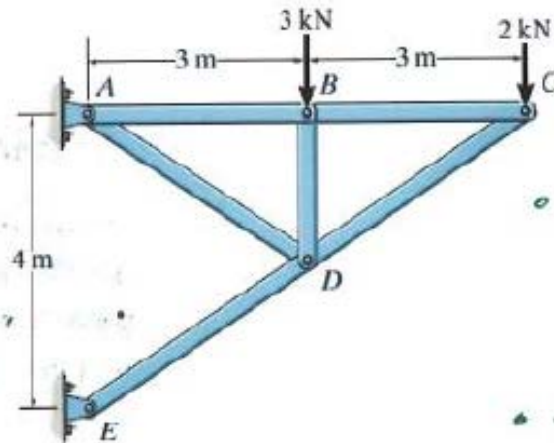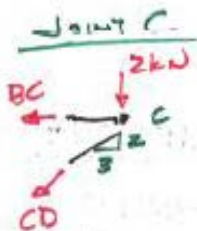## Problem 3 – Trusses I

Determine the force in each member of the truss.
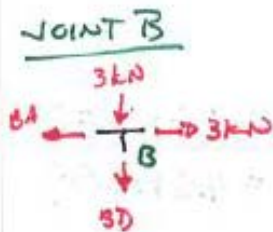

o AGAIN, USE METHOD OF JOINTS TO SOLVE SINCE YOU NEED FORCES IN EACH MEMBER

• START W/ JOINT C - ONLY 2 UNKNOWNS ∴ DO NOT NEED REACTION FORCES @ A & E

JOINT C
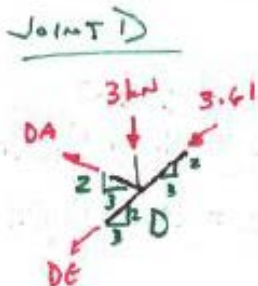

$\uparrow \Sigma F_y = 0$ $-2 - \frac{2}{\sqrt{13}} CD = 0$

-3.61

$\rightarrow \Sigma F_x = 0$ $-BC - \frac{3}{\sqrt{13}} CD = 0$

$CD = -3.61$ kN

$CD = 3.61$ kN (C)

$\underline{BC = 3\text{ kN (T)}}$

JOINT B

BY INSPECTION!

$BA = 3$ kN (T)

$BD = 3$ kN (C)

JOINT D

$\rightarrow \Sigma F_x = 0$ $\frac{3}{\sqrt{13}}(3.61) - \frac{3}{\sqrt{13}} DA - \frac{3}{\sqrt{13}} DE = 0$

$\uparrow \Sigma F_y = 0$ $-\frac{2}{\sqrt{13}}(3.61) + \frac{2}{\sqrt{13}} DA - \frac{2}{\sqrt{13}} DE - 3 = 0$

SIMULTANEOUS EQNS OR SUBSTITUTION

$DA = 2.70$ kN (T)

$DE = 6.31$ kN (C)