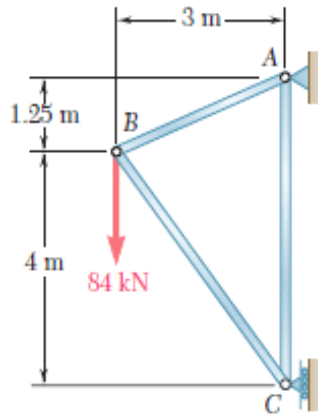
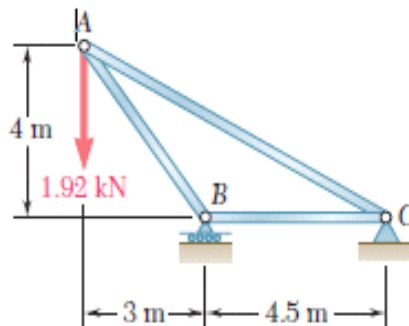


Tutorial sheet 4

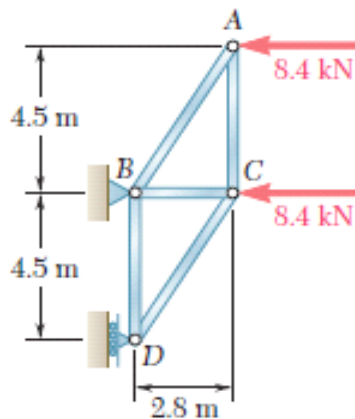
1. Determine the force in each member of the truss shown. State whether each member is in tension or compression [$R_c=48 \text{ KN}$, $A_y=84 \text{ KN}$, $A_x=48 \text{ KN}$]
 [$AB=52 \text{ KN (T)}$, $AC=64 \text{ KN (T)}$, $BC=80 \text{ KN (C)}$]



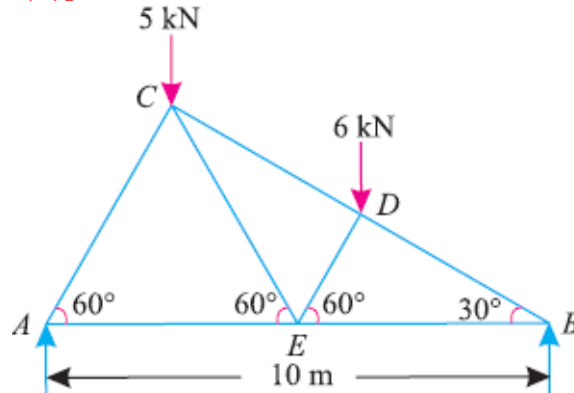
2. Determine the force in each member of the truss shown. State whether each member is in tension or compression [$C_x=0$, $C_y=1.28 \text{ KN}$, $R_B=3.2 \text{ KN}$]
 [$AB=4 \text{ KN (C)}$, $BC=2.4 \text{ KN (C)}$, $AC=2.72 \text{ KN (T)}$]



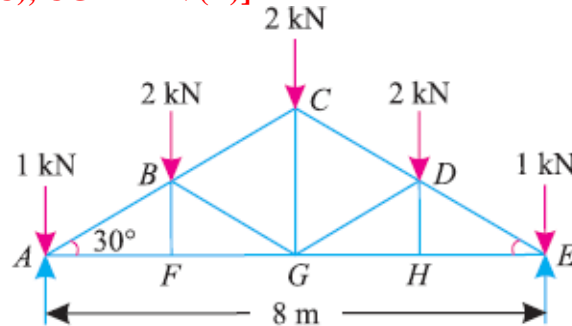
3. Determine the force in each member of the truss shown. State whether each member is in tension or compression [$R_D=8.4 \text{ KN}$, $B_x=25.2 \text{ KN}$, $B_y=0$]
 [$AB=15.9 \text{ KN (C)}$, $AC=13.5 \text{ KN (T)}$, $CD=15.9 \text{ KN (T)}$, $BC=16.8 \text{ KN (C)}$, $BD=13.5 \text{ KN (C)}$]



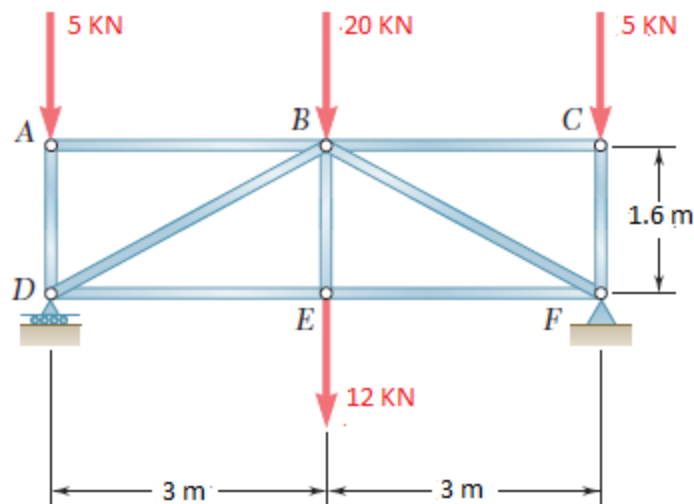
4. Determine the force in each member of the truss shown. State whether each member is in tension or compression [AC=6.92 kN (C), AE=3.46 kN (T), BD=10 kN (C), BE=8.66 kN (T), CD=7 kN (C), ED=5.2 kN (C), CE=5.2 kN (T)]



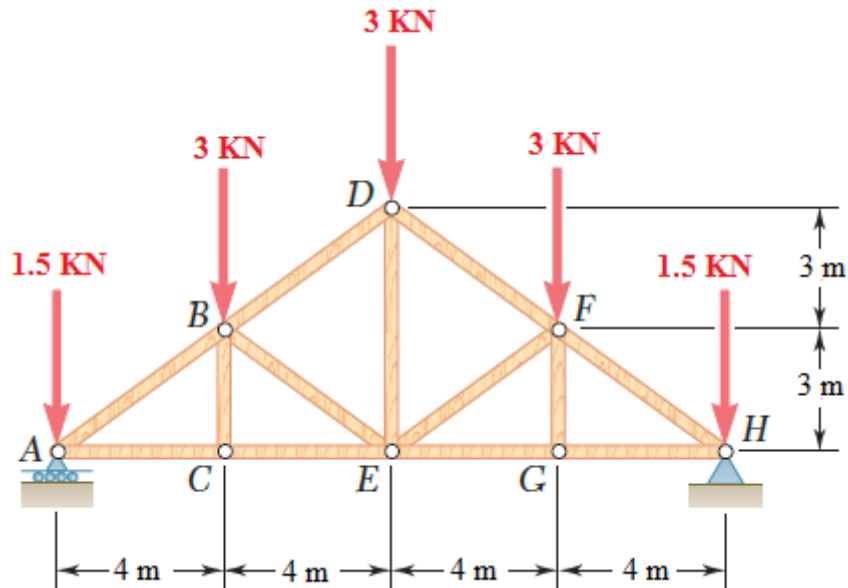
5. Determine the force in each member of the truss shown. State whether each member is in tension or compression [AC=DE= 6 kN (C), AF=EH=5.2 kN (T), FG=GH=5.2 kN (T), BF=DH=0, BG=DG= 2 kN (C), BC=CD= 4 kN (C), CG= 2 kN (T)]



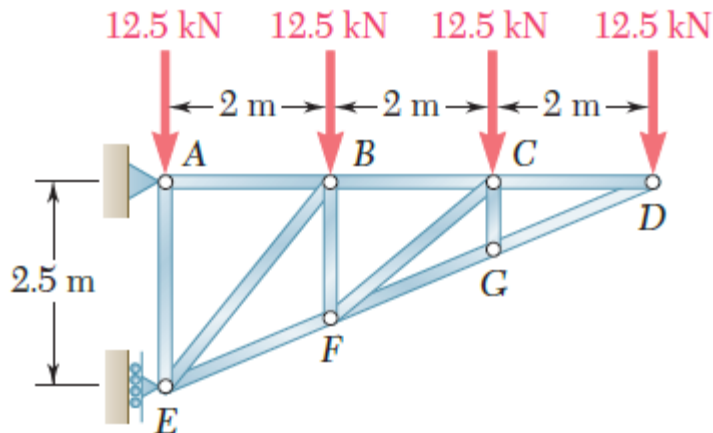
6. Determine the force in each member of the truss shown. State whether each member is in tension or compression [$F_x=0$, $F_y= 21$ kN, $R_d= 21$ kN] [AB=0, AD=5 kN (C), BD= 34 kN (C), DE= 30 kN (T), BE= 12 kN (T)]



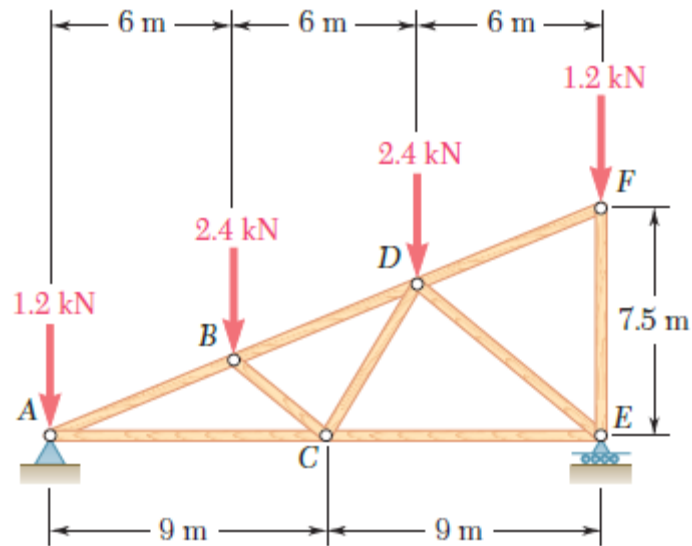
7. Determine the force in each member of the truss shown. State whether each member is in tension or compression [$R_A=6 \text{ KN}$, $H_Y= 6 \text{ KN}$, $H_X=0$]
 $[AB=7.5 \text{ KN (C)}$, $AC=6 \text{ KN (T)}$, $CE= 6 \text{ KN (T)}$, $BD= 5 \text{ KN (C)}$, $BE=2.5 \text{ KN (C)}$, $DF= 5 \text{ KN (C)}$,
 $DE= 3 \text{ KN (T)}$, $EF=2.5 \text{ KN (C)}$, $EG= 6 \text{ KN (T)}$, $EG=0$, $FH= 7.5 \text{ KN (C)}$, $GH= 6 \text{ KN (T)}$]



8. Determine the force in each member of the truss shown. State whether each member is in tension or compression [$CD=30 \text{ KN (T)}$, $DG=32.5 \text{ KN (C)}$, $CG=0$, $FG=32.5 \text{ KN (C)}$, $CF=19.53 \text{ KN (C)}$, $BC=45 \text{ KN (T)}$, $EF=48.8 \text{ KN (C)}$, $BF=6.25 \text{ KN (T)}$, $BE= 24 \text{ KN (C)}$, $AB= 60 \text{ KN (T)}$, $AE=37.5 \text{ KN (T)}$]



9. Determine the force in each member of the truss shown. State whether each member is in tension or compression [$A_X=0$, $A_Y=R_E= 3.6 \text{ KN}$]
 $[DF=0$, $EF= 1.2 \text{ KN (C)}$, $AB= 6.24 \text{ KN (C)}$, $AC= 2.76 \text{ KN (T)}$, $BD= 4.16 \text{ KN (C)}$, $BD= 2.5 \text{ KN (C)}$,
 $CD= 1.867 \text{ KN (T)}$, $CE= 2.88 \text{ KN (T)}$, $DE= 3.75 \text{ KN (C)}$]



10. Determine the force in each member of the truss shown. State whether each member is in tension or compression [$A_x = 0$, $A_y = R_G = 30 \text{ kN}$]
 [AB= 37.5 kN (C), AC= 22.5 kN (T), BC= 37.5 kN (T), BD= 45 kN (C), CD=0, CE= 45 kN (T)]

