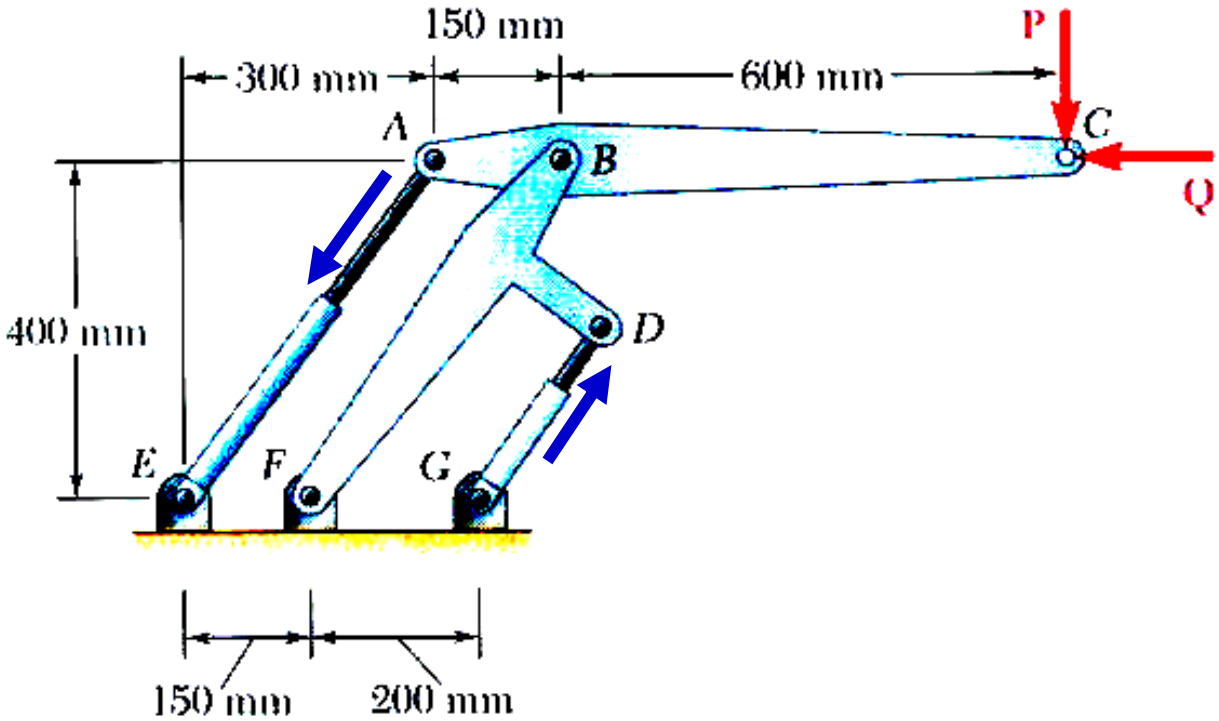


Fig. P6.139 and P6.140

P = 160 Q = 80

หาแรงดันในกระบอกไฮดรอลิกทั้งสอง AE, DG

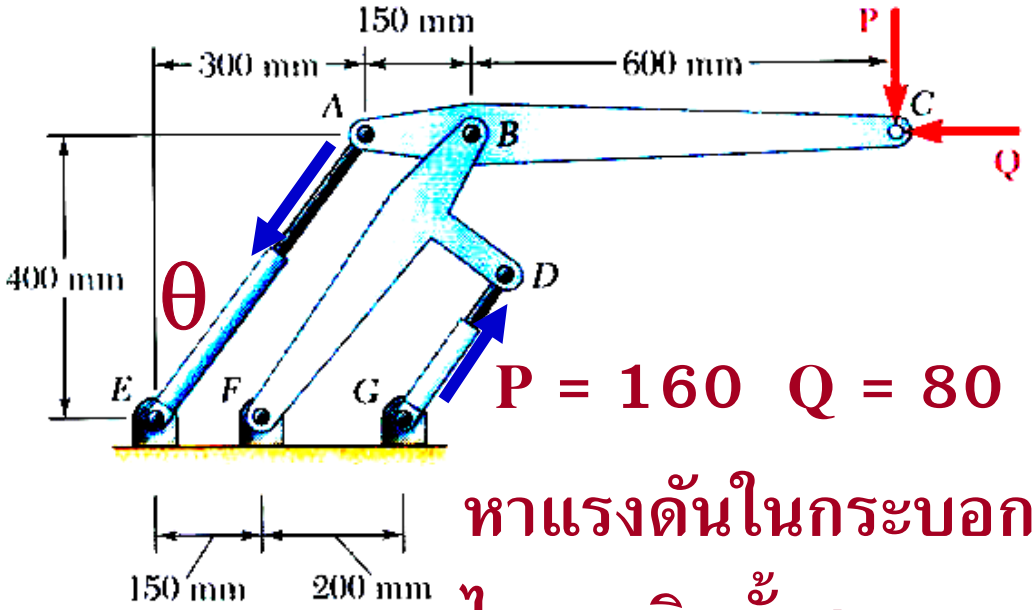
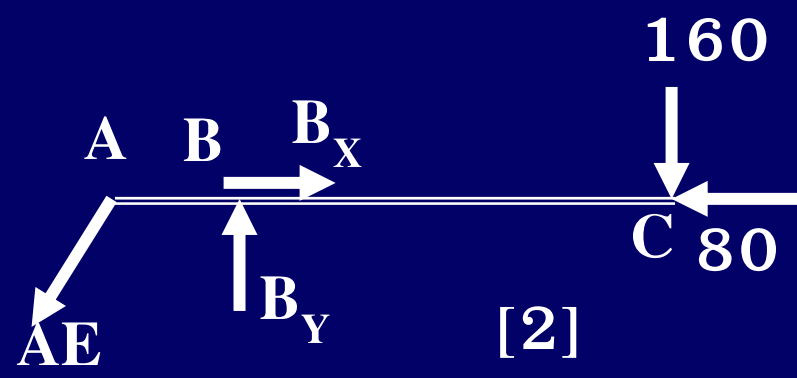
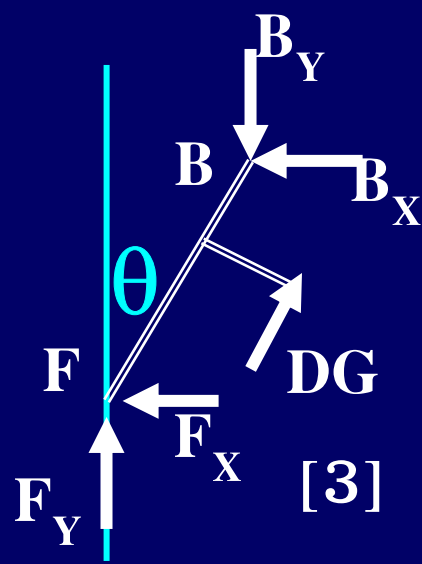


Fig. P6.139 and P6.140

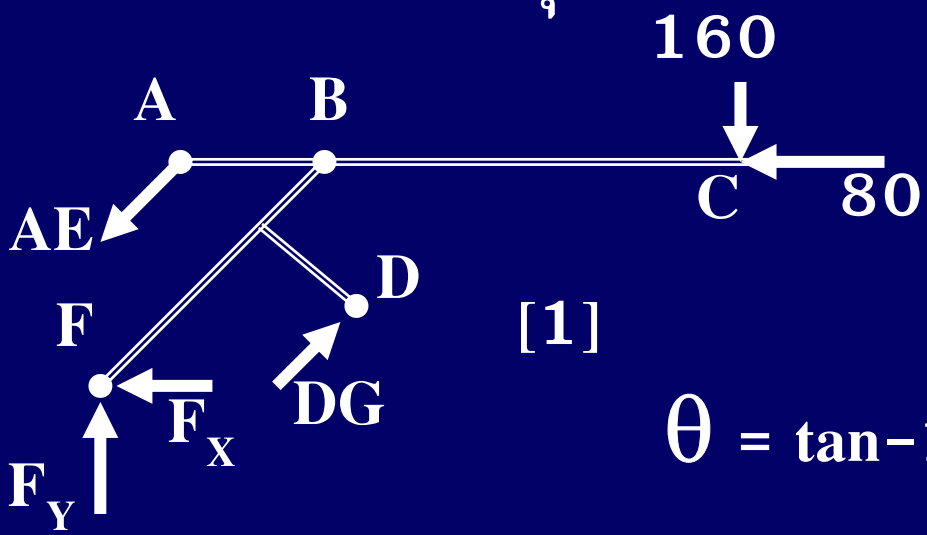
P = 160 Q = 80

หาแรงดันในกระบอกไฮดรอลิกทั้งสอง

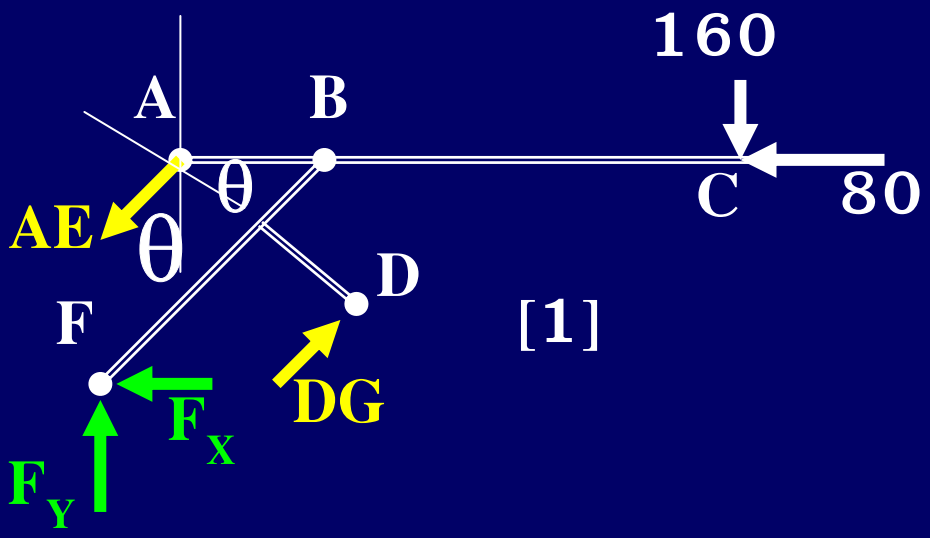




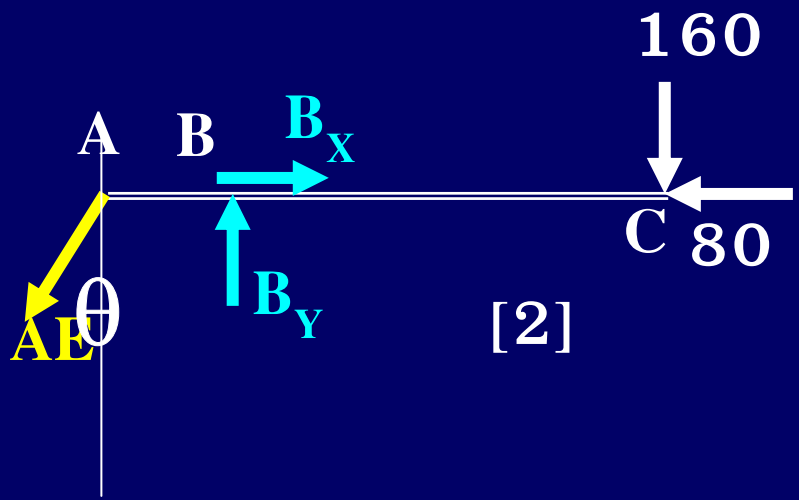
เขียน FBD ก้านโยกทั้งชุด และแยกส่วน



θ = tan-1 300/400 = 36.87ฐ



$\theta = 36.87$ฐ

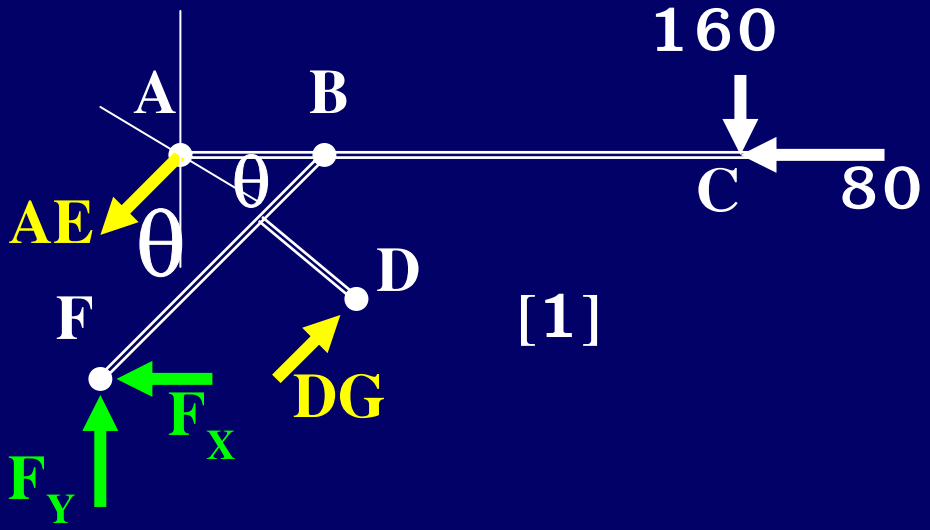


จากรูป[2] $\sum M_B = 0$

$AE\cos\theta\,(150) - 160(600) = 0$

$AE = 800$ N (T)

θ = 36.87ฐ จากรูป[1]และ[1-2] $\sum M_F = 0$



[1]

$AE(BJ)+DG(FH)-160(FI)=0$

$800(BJ)+DG(FH)-160(FI)=0$ ----- (1)

หาระยะต่าง ๆจากรูป[1-2]

$BJ=AB(\cos\theta)=120$ **

$FH=FG(\cos\theta)=160$ **

$FI=FK+KI$

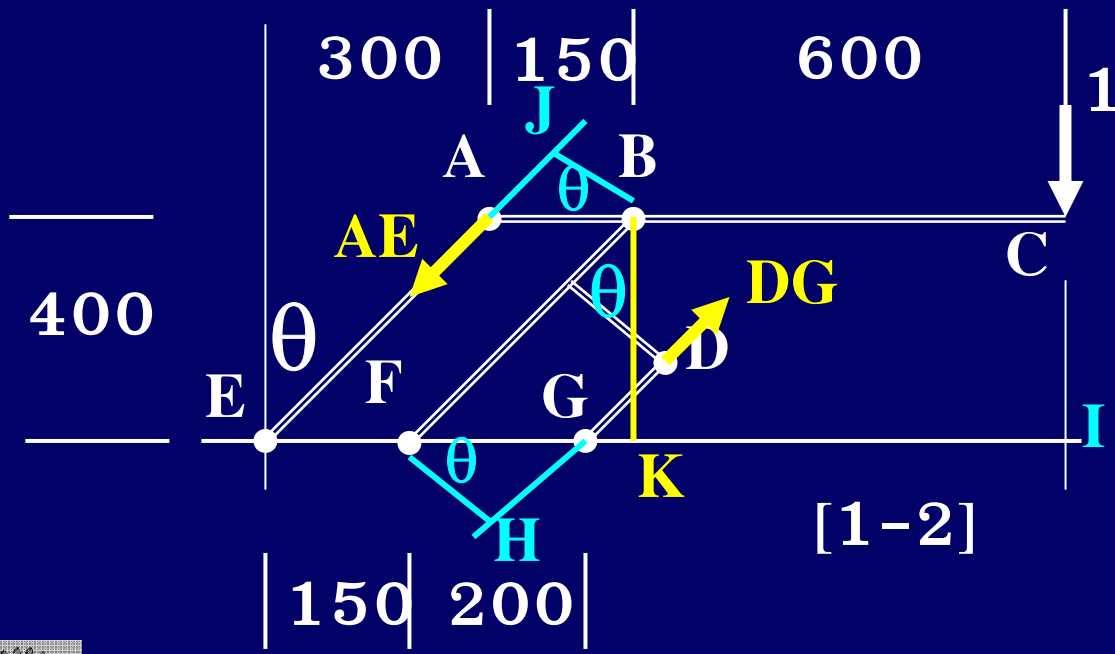
$FK=BK(\tan\theta)=300$

$KI=600$

$FI=300+600=900$ **

แทนค่าลงใน (1)

$DG = 100$ N (C)



[1-2]

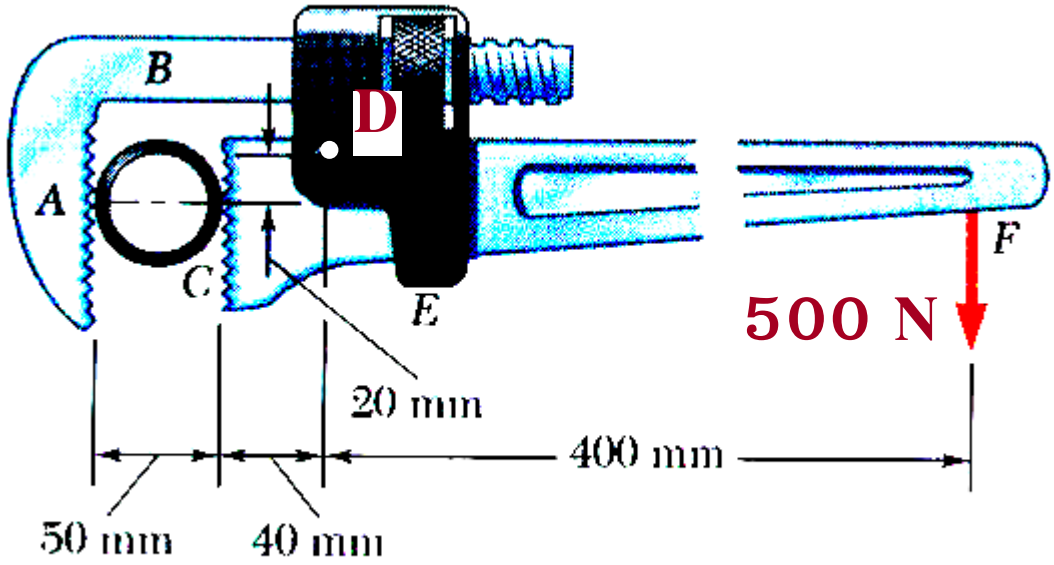
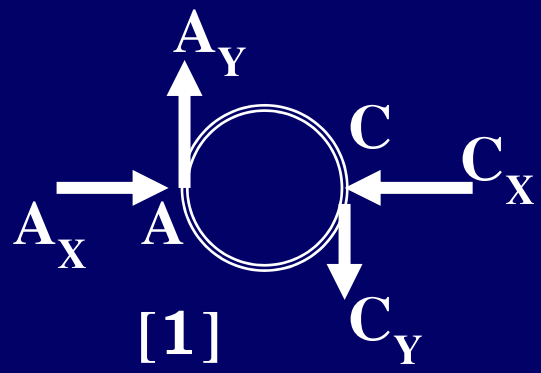
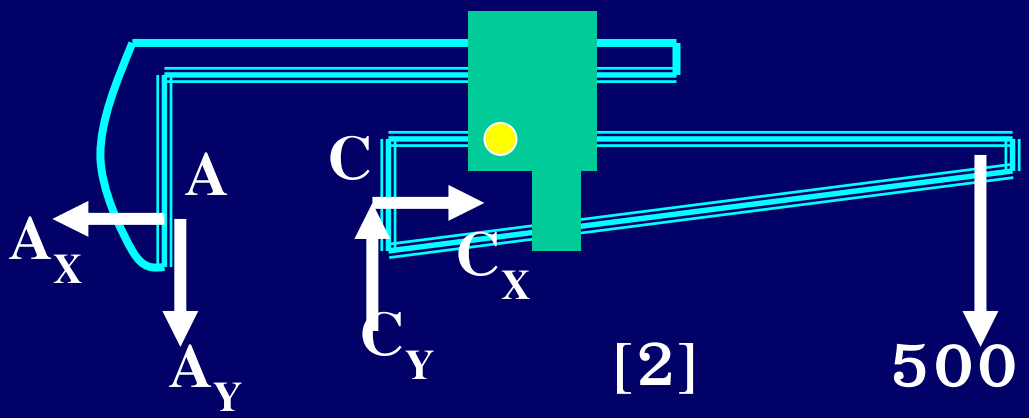
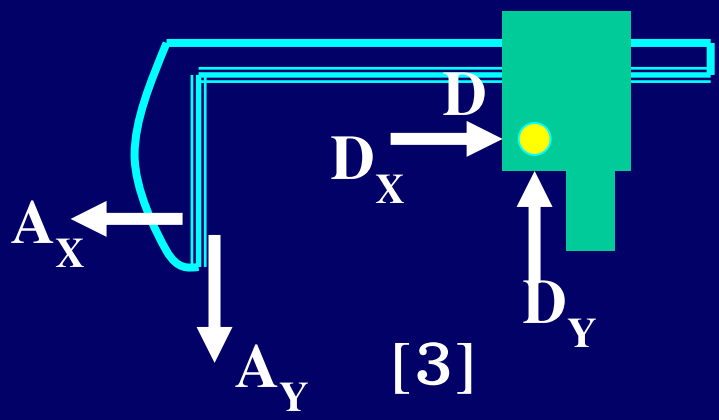


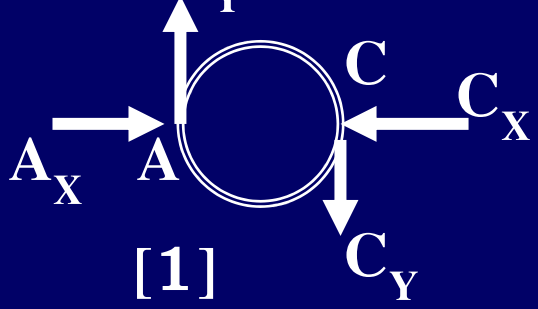
Fig. P6.173

ให้หาแรงที่กระทำ
ต่อท่อน้ำที่จุด A และ C
เขียน FBD แยกชิ้นส่วน





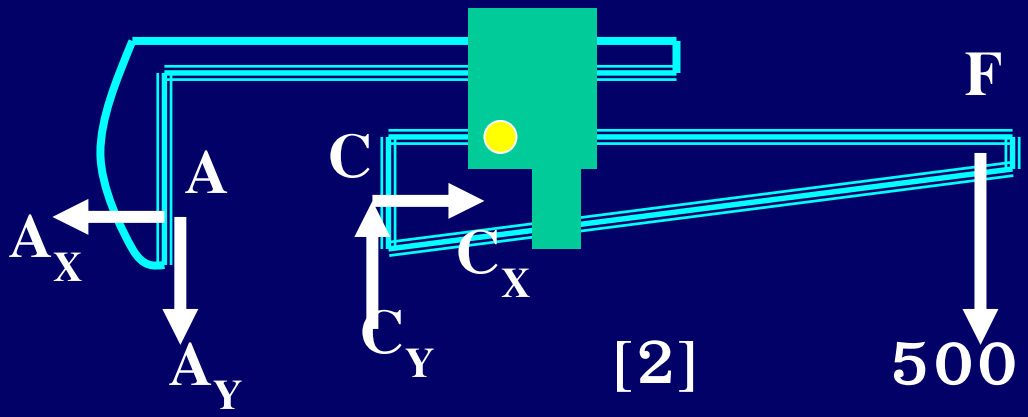




จากรูป[1]

$\sum F_X\ 0 \quad A_X=C_X$ --(1)

$\sum F_Y\ 0 \quad A_Y=C_Y$ --(2)

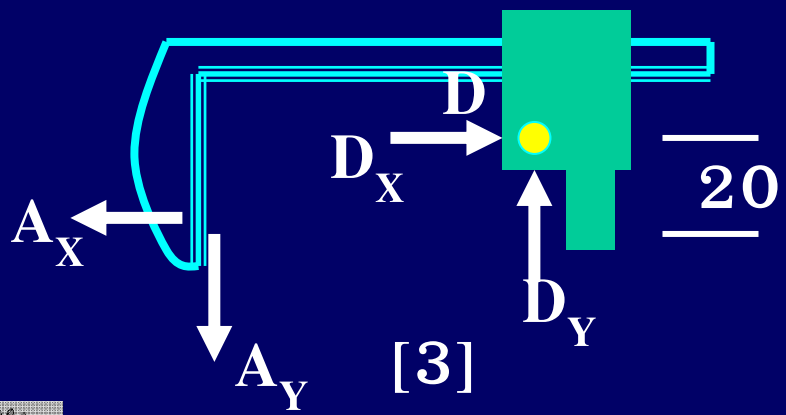


จากรูป[2]

$\sum M_A=0 \quad C_Y = 45000\ N$

จาก(2) $A_Y = 45000\ N$

จากรูป[3]



$\sum M_D=0 \quad A_Y(90)-A_X(20)=0$

$45000(90)-A_X(20)=0$

$A_X = 202500\ N$

จาก(1) $C_X = 202500\ N$

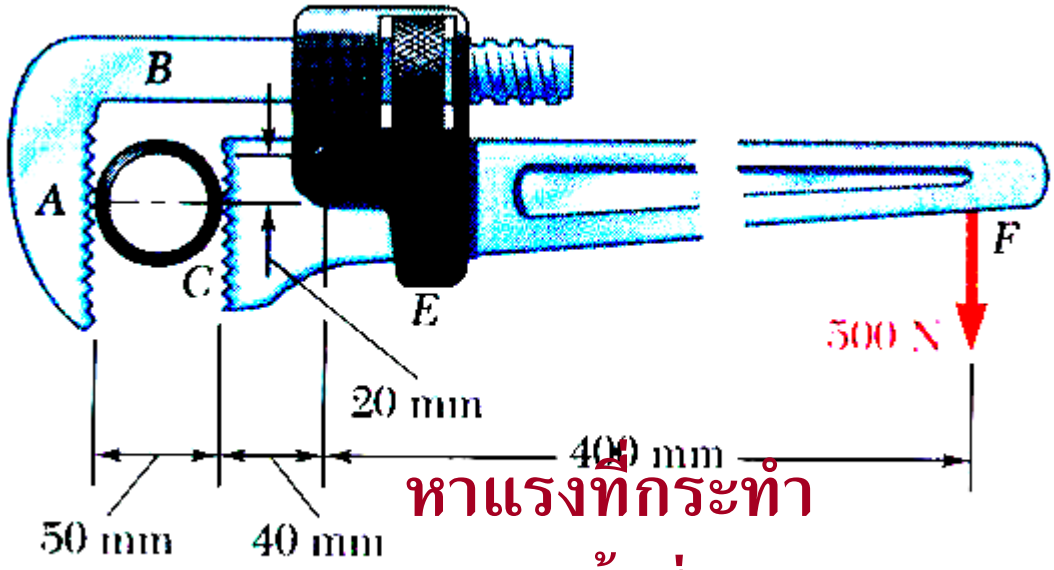
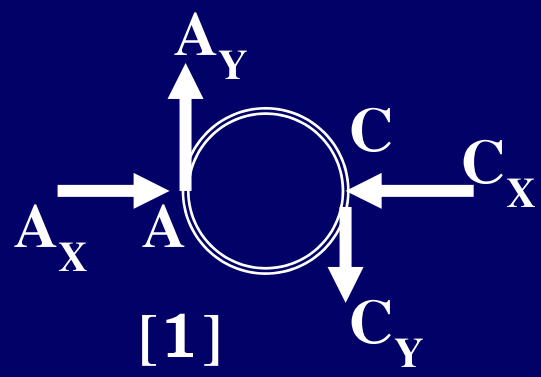


Fig. P6.173

หาแรงที่กระทำ

ต่อท่อน้ำที่จุด A และ C

FBD ท่อน้ำ



[1]

สรุป

$A_X = 202500\ N = 202.5\ kN \rightarrow$

$A_Y = 45000\ N = 45\ kN \uparrow$

$C_X = 202500\ N = 202.5\ kN \leftarrow$

$C_Y = 45000\ N = 45\ kN \downarrow$