Buge Peter Kirah

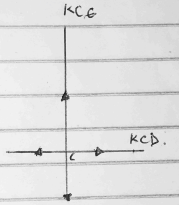
17/ENG03/013.

CIVIL ENGR.

CVE 304

STRUCTURAL MECHANICS.

ASSIGNMENT ONE.



Joint C.

Resolving Horizontally.

$BC = 50KN$

$\therefore -BC + DC = 0$

$-50 + DC = 0$

$DC = 50KN$ (Tension).

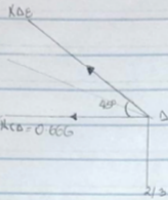
Resolving Vertically.

$-BC + FC = 0$

$-50 + FC = 0$

$FC = 50KN$ (Tension.

Joint A



Resolving Horizontally

$-BC - AE\cos 45 = 0$

$-50 - AE\cos 45 = 0$

$-50 = AE\cos 45$

$AE = \frac{-50}{\cos 45}$

$= -70.71\,kN$ (COMPRESSION)

2)

MEMBER	L (m)	P (kN)	a (cm^2)	$P = \frac{P}{a}$ (kN/m^2)	u	Pu
AF	4.24	-70.71	0.0004	-176775	-0.471	353086.75
AB	3	50	0.0004	125000	0.333	12487.5
BC	3	50	0.0004	125000	0.606	249750
BF	3	50	0.0004	125000	0.333	12487.5
FE	3	50	0.0004	125000	-0.333	-12487.5
BE	4.24	0	0.0004	~~125000~~	-0.471	0
EC	3	50	0.0004	125000	1.000	37500
EA	4.24	-70.71	0.0004	-176775	-0.942	706053.5
CA	3	50	0.0004	125000	0.666	249750

$\Sigma Pu = 1608567.5$

$EV = \Sigma Pu \quad 1608567.5$