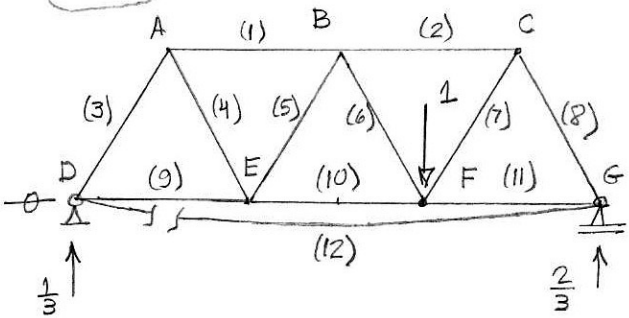
$$d_k = \sum_{b=1}^{n_b} \frac{\hat{N}_b\, n_b\, \ell_b}{EA}$$

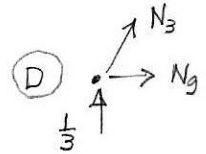
ν_B : $n_b = \hat{n}_b = \hat{N}_b/\sqrt{3}$ (proporcional)

ν_F : n_b para a carga unitária aplicada no ponto F da EIF.

EIF

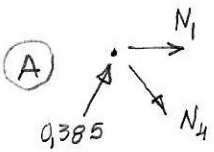


b	$\hat{N}$ (kN)	$\hat{n}_{(1)}$ (kN)	$n_{(2)}$ (kN)
1	-1		-0,385
2	-1		-0,770
3	-1		-0,385
4	+1		0,385
5	-1		-0,385
6	-1	$\hat{N}/\sqrt{3}$	0,385
7	+1		0,770
8	-1		-0,770
9	0,083		0,192
10	1,083		0,577
11	0,083		0,385
12	0,417		0

(D) 

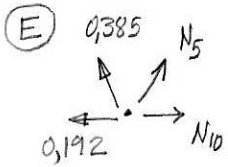
$N_3 = -\frac{1}{3}\frac{2}{\sqrt{3}} = -0,385$

$N_9 = +0,192$

(A) 

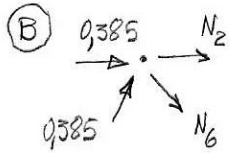
$N_4 = 0,385$

$N_1 = -0,770 \times \frac{1}{2} = -0,385$

(E) 

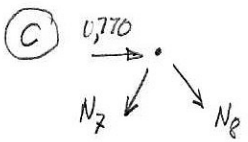
$N_5 = -0,385$

$N_{10} = 0,192 + 0,385 = 0,577$

(B) 

$N_6 = +0,385$

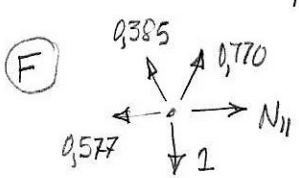
$N_2 = -0,385 - 0,385 = -0,770$

(C) 

$N_7 = -N_8$

$2N_7 \times \frac{1}{2} = 0,770$

$N_7 = 0,770$, $N_8 = -0,770$

(F) 

$N_{11} = 0,577 - \frac{0,385}{2}$

$= 0,385$

$$\nu_B = \sum_{b=1}^{12} \frac{\hat{N}_b \hat{n}_b^{(1)}}{EA}\ell_b = \frac{a}{EA}\left(\sum_{b=1}^{11} \frac{\hat{N}_b^2}{\sqrt{3}} + 3\frac{\hat{N}_{12}^2}{\sqrt{3}}\right)$$

$$= \frac{a}{EA}\left(\frac{9,187}{\sqrt{3}} + \frac{0,522}{\sqrt{3}}\right) = 5,61\,\frac{a}{EA}$$

$$\nu_F = \sum_{b=1}^{12} \frac{N_b\, n_b^{(2)}}{EA}\ell_b = \frac{a}{EA}(4,14)$$

$\nu_B = 5,61\,\frac{a}{EA}\downarrow$ $\nu_F = 4,14\,\frac{a}{EA}\downarrow$