

Example 14a-2

Element 1

xn	yn	xf	yf	L
0	0	-8	8	11.31371

	1	2	3	4	
AE	0.0442	-0.0442	-0.0442	0.0442	1
	-0.0442	0.0442	0.0442	-0.0442	2
	-0.0442	0.0442	0.0442	-0.0442	3
	0.0442	-0.0442	-0.0442	0.0442	4

Element 2

xn	yn	xf	yf	L
0	0	0	8	8

	1	2	5	6	
AE	0.0000	0.0000	0.0000	0.0000	1
	0.0000	0.1250	0.0000	-0.1250	2
	0.0000	0.0000	0.0000	0.0000	5
	0.0000	-0.1250	0.0000	0.1250	6

Element 3

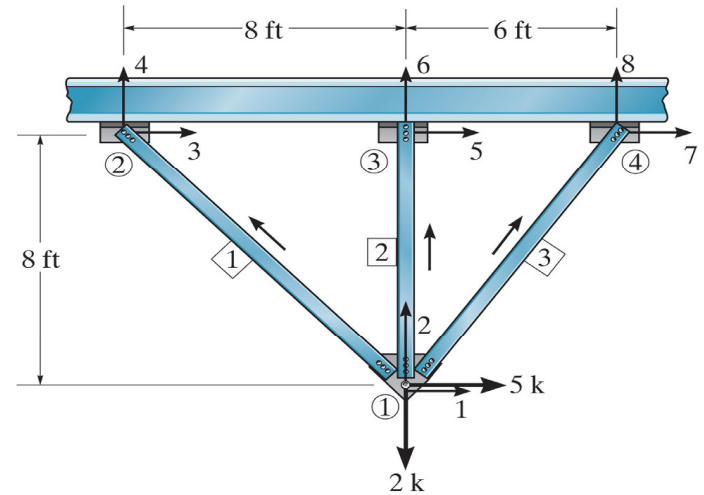
xn	yn	xf	yf	L
0	0	6	8	10

	1	2	7	8	
AE	0.0360	0.0480	-0.0360	-0.0480	1
	0.0480	0.0640	-0.0480	-0.0640	2
	-0.0360	-0.0480	0.0360	0.0480	7
	-0.0480	-0.0640	0.0480	0.0640	8

λ_x	λ_y
-0.70711	0.707107

λ_x	λ_y
0	1

λ_x	λ_y
0.6	0.8



$$\frac{AE}{L} \begin{bmatrix} \lambda_x^2 & \lambda_x \lambda_y & -\lambda_x^2 & -\lambda_x \lambda_y \\ \lambda_x \lambda_y & \lambda_y^2 & -\lambda_x \lambda_y & -\lambda_y^2 \\ -\lambda_x^2 & -\lambda_x \lambda_y & \lambda_x^2 & \lambda_x \lambda_y \\ -\lambda_x \lambda_y & -\lambda_y^2 & \lambda_x \lambda_y & \lambda_y^2 \end{bmatrix} \begin{Bmatrix} N_x \\ N_y \\ F_x \\ F_y \end{Bmatrix}$$

	1	2	3	4	5	6	7	8	
k1	0.0442	-0.0442	-0.0442	0.0442					1
	-0.0442	0.0442	0.0442	-0.0442					2
	-0.0442	0.0442	0.0442	-0.0442					3
	0.0442	-0.0442	-0.0442	0.0442					4
									5
									6
									7
									8

	1	2	3	4	5	6	7	8	
k2	0.0000	0.0000			0.0000	0.0000			1
	0.0000	0.1250			0.0000	-0.1250			2
									3
									4
	0.0000	0.0000			0.0000	0.0000			5
	0.0000	-0.1250			0.0000	0.1250			6
									7
									8

	1	2	3	4	5	6	7	8	
k3	0.0360	0.0480					-0.0360	-0.0480	1
	0.0480	0.0640					-0.0480	-0.0640	2
									3
									4
									5
									6
	-0.0360	-0.0480					0.0360	0.0480	7
	-0.0480	-0.0640					0.0480	0.0640	8

	1	2	3	4	5	6	7	8	
K AE	0.0802	0.0038	-0.0442	0.0442	0.0000	0.0000	-0.0360	-0.0480	1
	0.0038	0.2332	0.0442	-0.0442	0.0000	-0.1250	-0.0480	-0.0640	2
	-0.0442	0.0442	0.0442	-0.0442	0.0000	0.0000	0.0000	0.0000	3
	0.0442	-0.0442	-0.0442	0.0442	0.0000	0.0000	0.0000	0.0000	4
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5
	0.0000	-0.1250	0.0000	0.0000	0.0000	0.1250	0.0000	0.0000	6
	-0.0360	-0.0480	0.0000	0.0000	0.0000	0.0000	0.0360	0.0480	7
	-0.0480	-0.0640	0.0000	0.0000	0.0000	0.0000	0.0480	0.0640	8

	K			Q		D (m) = $K^{-1} Q$	
	1	2					
1	0.080194	0.003806		5	1	62.804	1
2	0.003806	0.233194		-2	2	-9.602	2

q1					D		4.53 k
	$-\lambda_x$	$-\lambda_y$	λ_x	λ_y	62.804	1	
					-9.602	2	
	0.707107	-0.70711	-0.70711	0.707107	0.000	3	
					0.000	4	

q2					D		1.20 k
	$-\lambda_x$	$-\lambda_y$	λ_x	λ_y	62.804	1	
					-9.602	2	
	0	-1	0	1	0.000	5	
					0.000	6	

q3					D		-3.00 k
	$-\lambda_x$	$-\lambda_y$	λ_x	λ_y	62.804	1	
					-9.602	2	
	-0.6	-0.8	0.6	0.8	0.000	7	
					0.000	8	