

$$|E(G)|$$

$$|V(G)| - k$$

$$|E(G)| - |V(G)| + k$$

Spanning Tree $ E(B) $						Chords $ E(G) - E(B) $				
$e_{\ell+1}$	$e_{\ell+2}$...		$e_{ E }$	e_1	e_2	...	e_k	
± 1				0	± 1	0	± 1	0	0	
0	± 1			0	0	± 1	0	0	0	
	\ddots	± 1		\vdots	0			\vdots		
		0	\ddots	± 1	0	0	...	± 1	...	0
	...		\ddots	± 1	0					
0				0	± 1	± 1	0	0	± 1	
0	0	...	± 1	± 1	± 1	± 1	0	\ddots	0	
± 1	± 1	0	0	...	± 1	0	± 1	0	\ddots	
		...				\ddots	0	± 1	0	
						0	\ddots	0	± 1	

$$\left. \begin{array}{l} |E(G)| - |V(G)| - k \\ |E(G)| - |V(G)| + k \end{array} \right\} |E(G)|$$

unimodular
submatrices