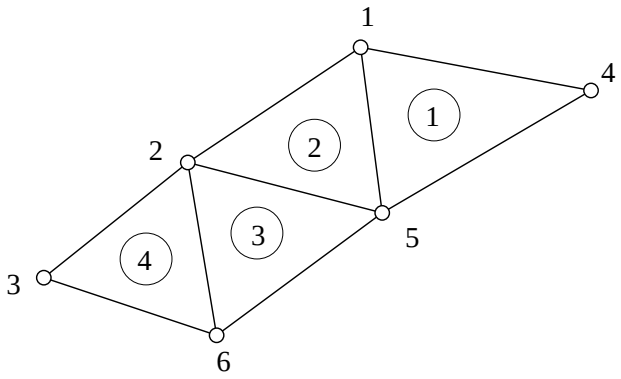
Solution: Problem 6.S3

NP - ARRAY

I	J	K	
1	5	4	element 1
1	2	5	element 2
6	5	2	element 3
2	3	6	element 4



	1	2	3	4	5	6
1	$+S_1II$ $+S_2II$	$+S_2IJ$		$+S_1IK$	$+S_1IJ$ $+S2IK$	
2	$+S_2JI$	$+S_2JJ$ $+S_3KK$ $+S_4II$	$+S_4IJ$		$+S_2JK$ $+S_3KJ$	$+S_3KI$ $+S_4IK$
3		$+S_4JI$	$+S_4JJ$			$+S_4JK$
4	$+S_1KI$			$+S_1KK$	$+S_1KJ$	
5	$+S_1JI$ $+S_2KI$	$+S_2KJ$ $+S_3JK$		$+S_1JK$	$+S_1JJ$ $+S_2KK$ $+S_3JJ$	$+S_3JI$
6		$+S_3IK$ $+S_4KI$	$+S_4KJ$		$+S_3IJ$	$+S_3II$ $+S_4KK$

Note: Have students check to see if the number of entries on the diagonal equal the number of elements framing into the corresponding node in the figure. Also, because the element matrices are symmetric, e.g. $SIJ = SJI$, students should check to make sure their global matris is also symmetric. For example, note that the global entry (2,6) is symmetric with the global entry (6,2).