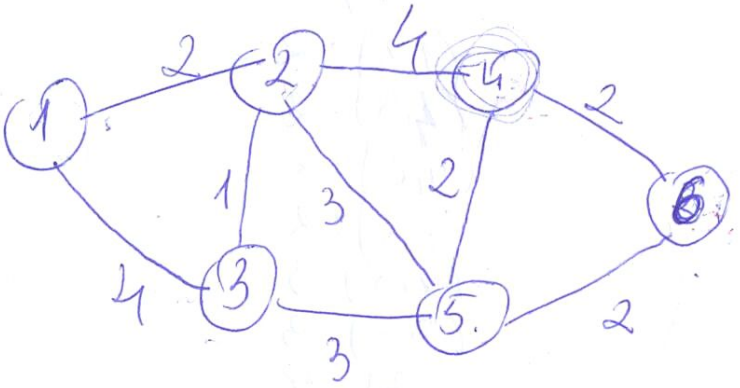
Minimum spanning tree



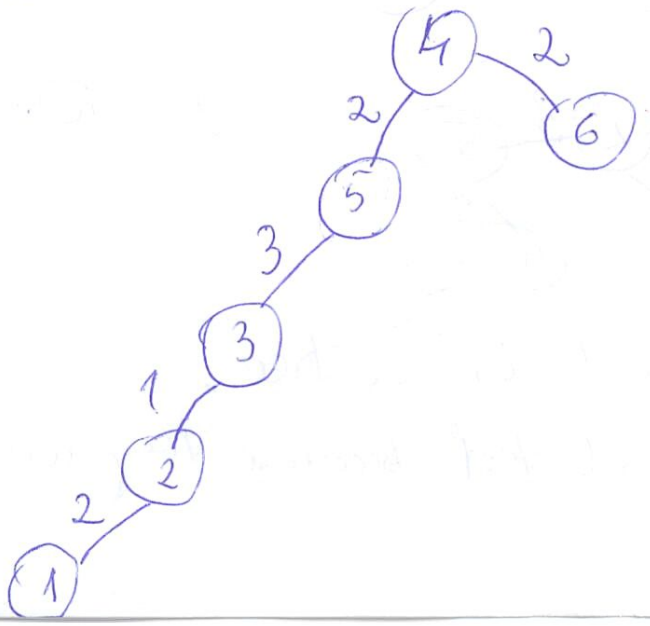
Edges sorted

(2,3): 1
(1,2): 2
(4,5): 2
(5,6): 2
(4,6): 2
(2,5): 3
(3,5): 3
(2,4): 4
(1,3): 4

Prim's algorithm

	selected edge	V_{new}	E_{new}	minimum spanning tree
initialization		$\{1\}$	$\{\}$	
iteration 1	(1,2)	$\{1,2\}$	$\{(1,2)\}$	cost = 2
iteration 2	(2,3)	$\{1,2,3\}$	$\{(1,2),(2,3)\}$	cost = 3
iteration 3	(2,5)	$\{1,2,3,5\}$	$\{(1,2),(2,3),(2,5)\}$	cost = 6
iteration 4	(4,5)	$\{1,2,3,4,5\}$	$\{(1,2),(2,3),(2,5),(4,5)\}$	cost = 8
iteration 5	(5,6)	$\{1,2,3,4,5,6\}$	$\{(1,2),(2,3),(2,5),(4,5),(5,6)\}$	cost = 10

Another minimum spanning tree with the same cost = 10.



cost = 10 ✓