



Department of
Industrial Engineering

IE 454 Combinatorial Analysis

<http://ie454.cankaya.edu.tr>

Fall 2010 Tuesday 9:40-12:30 A201

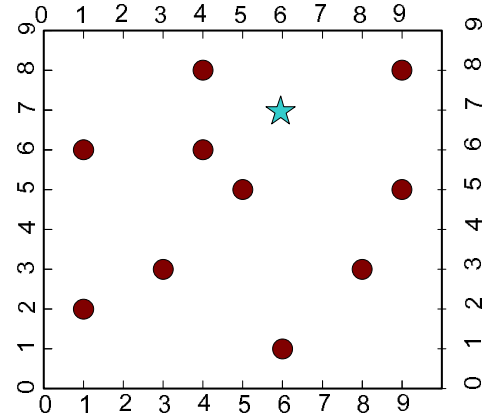
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QUIZ 3: Solution

Apply the sweep heuristic pivoting at \star for finding a TSP tour of the \bullet points to be visited. Show the tour in the figure. Calculate the tour length in terms of Euclidean Distance. Calculate the gain of deleting the edge between $(1,6)-(4,8)$ and the edge between $(1,2)-(4,6)$.



$$\text{Tour length} = 5 + 3 + \sqrt{13} + 5 + 3 + \sqrt{5} + \sqrt{8} + \sqrt{17} + \sqrt{8} + \sqrt{5}$$

$$\text{Gain} = \left[\sqrt{(4-1)^2 + (8-6)^2} + \sqrt{(4-1)^2 + (6-2)^2} \right] - [2 + 4] = \sqrt{13} - 1$$

