

②

5	4	3	2	5
10	8	4	7	5
9	9	8	4	5
1	6	2	6	15

			5	5
	3	2		<del>5</del>
1	3		1	<del>4</del>
1	<del>6</del>	<del>2</del>	<del>6</del>	<del>15</del>

			5
	3 <sup>+θ</sup>	2 <sup>-θ</sup>	
1	3 <sup>-θ</sup>	<sup>+θ</sup>	1

$$\theta = 2$$

		<sup>+θ</sup>	5 <sup>-θ</sup>
	5		
1	1	2 <sup>-θ</sup>	1 <sup>+θ</sup>

$$\theta = 2$$

	<sup>+θ</sup>	2	3 <sup>-θ</sup>
	5		
1	1 <sup>-θ</sup>		3 <sup>+θ</sup>

$$\theta = 1$$

Método do Stepping-Stone

$$\delta_{11} = 5 - 2 + 4 - 9 = -2$$

$$\delta_{12} = 4 - 2 + 4 - 9 = -3$$

$$\delta_{13} = 3 - 4 + 8 - 9 + 4 - 2 = 0$$

$$\delta_{21} = 10 - 8 + 9 - 9 = +2$$

$$\delta_{24} = 7 - 4 + 9 - 8 = +4$$

$$\delta_{33} = 8 - 9 + 8 - 4 = -13$$

Este custo  
este não  
calculado

$$\delta_{11} = 5 - 2 + 4 - 9 = -2$$

$$\delta_{12} = 4 - 2 + 4 - 9 = -2$$

$$\delta_{13} = 3 - 2 + 4 - 8 = -3$$

$$\delta_{21} = 10 - 8 + 9 - 9 = +2$$

$$\delta_{23} = 4 + 8 + 9 - 8 = +13$$

$$\delta_{24} = 7 - 4 + 9 - 8 = +4$$

$$\delta_{11} = 5 - 2 + 4 - 9 = -2$$

$$\delta_{12} = 4 - 2 + 4 - 9 = -3$$

$$\delta_{21} = 10 - 8 + 9 - 9 = +2$$

$$\delta_{23} = 4 - 3 + 2 - 4 + 9 - 8 = 0$$

$$\delta_{24} = 7 - 4 + 9 - 8 = +5$$

$$\delta_{33} = 8 - 3 + 2 - 4 = +3$$

	1 <sup>+θ</sup>	2 <sup>-θ</sup>	2
	5 <sup>-θ</sup>	<sup>+θ</sup>	
1			4

$$\theta = 2$$

$$\delta_{11} = 5 - 2 + 4 - 9 = -2$$

$$\delta_{21} = 10 - 9 + 4 - 2 + 4 - 8 = -1$$

$$\delta_{23} = 4 - 3 + 4 - 8 = -3$$

$$\delta_{24} = 7 - 8 + 4 - 2 = +1$$

$$\delta_{32} = 9 - 4 + 2 - 4 = +3$$

$$\delta_{33} = 8 - 4 + 2 - 3 = +3$$

<sup>+θ</sup>	3		2 <sup>-θ</sup>
	3	2	
1 <sup>-θ</sup>			<sup>+θ</sup> 4

$$\theta = 1$$

$$\delta_{11} = 5 - 2 + 4 - 9 = -2$$

$$\delta_{13} = 3 - 4 + 8 - 4 = +3$$

$$\delta_{21} = 10 - 8 + 4 - 2 + 4 - 9 = -1$$

$$\delta_{24} = 7 - 8 + 4 - 2 = +1$$

$$\delta_{32} = 9 - 4 + 2 - 4 = +3$$

$$\delta_{33} = 8 - 4 + 2 - 4 + 8 - 4 = +6$$

1	3		1
	3	2	
			5

$$\delta_{13} = 3 - 4 + 8 - 4 = +3$$

$$\delta_{21} = 10 - 8 + 4 - 5 = +1$$

$$\delta_{24} = 7 - 2 + 4 - 8 = +1$$

$$\delta_{41} = 9 - 5 + 2 - 4 = +2$$

$$\delta_{42} = 9 - 4 + 2 - 4 = +3$$

$$\delta_{43} = 8 - 4 + 2 - 4 + 8 - 4 = +6$$

Solução ótima de custo mínimo =  $1 \times 5 + 3 \times 4 + 1 \times 2 + 3 \times 8 + 2 \times 4 + 5 \times 4 = 71$