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DISCIPLINA: CCE1014 – Pesquisa Operacional II
GABARITO

QUESTÕES - AULA 12

12.1) Resolva o problema do caixeiro viajante pelo método da inserção de menor encargo

O/D	1	2	3	4	5	6	7	8
1	-	9	35	26	18	16	42	24
2	26	-	11	15	18	38	34	40
3	9	21	-	21	15	11	33	37
4	32	33	40	-	36	30	24	32
5	37	11	29	26	-	25	38	26
6	14	28	13	14	9	-	20	22
7	31	17	20	29	25	27	-	19
8	9	18	32	38	35	32	38	-

Solução

1	1,2,1: 35	1,3,1: 44	1,4,1: 58	1,5,1: 55	1,6,1: 30	1,7,1: 73	1,8,1: 33
2		2,3,2: 32	2,4,2: 48	2,5,2: 29	2,6,2: 66	2,7,2: 51	2,8,2: 58
3			3,4,3: 61	3,5,3: 44	3,6,3: 24	3,7,3: 53	3,8,3: 69
4				4,5,4: 62	4,6,4: 44	4,7,4: 53	4,8,4: 70
5					5,6,5: 34	5,7,5: 63	5,8,5: 61
6						6,7,6: 47	6,8,6: 54
7							7,8,7: 57

Inserir	3-6 (11)	6-3 (13)
1	$9+16-11 = 14$	$14+35-13 = 36$
2	$21+38-11 = 48$	$28+11-13 = 26$
4	$21+30-11 = 40$	$14+40-13 = 41$
5	$15+25-11 = 29$	$9+29-13 = 25$
7	$33+27-11 = 49$	$20+20-13 = 27$
8	$37+32-11 = 58$	$32+32-13 = 51$

Inserir	3-1 (9)	1-6 (16)	6-3 (13)
2	$21+26-9 = 38$	$9+38-16 = 31$	$28+11-13 = 26$
4	$21+32-9 = 44$	$26+30-16 = 40$	$14+40-13 = 41$
5	$15+37-9 = 43$	$18+25-16 = 27$	$9+29-13 = 25$
7	$33+31-9 = 55$	$42+27-16 = 53$	$20+20-13 = 27$
8	$37+9-9 = 37$	$24+32-16 = 40$	$32+32-13 = 51$

Inserir	3-1 (9)	1-6 (16)	6-5 (9)	5-3 (29)
2	$21+26-9 = 38$	$9+38-16 = 31$	$28+18-9 = 37$	$11+11-29 = -7$
4	$21+32-9 = 44$	$26+30-16 = 40$	$14+36-9 = 41$	$26+40-29 = 37$
7	$33+31-9 = 55$	$42+27-16 = 53$	$20+25-9 = 36$	$38+20-29 = 29$
8	$37+9-9 = 37$	$24+32-16 = 40$	$32+35-9 = 58$	$26+32-29 = 29$

Inserir	3-1 (9)	1-6 (16)	6-5 (9)	5-2 (11)	2-3 (11)
4	$21+32-9 = 44$	$26+30-16 = 40$	$14+36-9 = 41$	$26+33-11 = 48$	$15+40-11 = 44$
7	$33+31-9 = 55$	$42+27-16 = 53$	$20+25-9 = 36$	$38+17-11 = 44$	$34+20-11 = 43$
8	$37+9-9 = 37$	$24+32-16 = 40$	$32+35-9 = 58$	$26+18-11 = 33$	$40+32-11 = 61$

Inserir	3-1 (9)	1-6 (16)	6-5 (9)	5-8 (26)	8-2 (18)	2-3 (11)
4	$21+32-9 = 44$	$26+30-16 = 40$	$14+36-9 = 41$	$26+32-26 = 32$	$38+33-18 = 53$	$15+40-11 = 44$
7	$33+31-9 = 55$	$42+27-16 = 53$	$20+25-9 = 36$	$38+19-26 = 31$	$38+17-18 = 37$	$34+20-11 = 43$

Inserir	3-1 (9)	1-6 (16)	6-5 (9)	5-7 (38)	7-8 (19)	8-2 (18)	2-3 (11)
4	$21+32-9 = 44$	$26+30-16 = 40$	$14+36-9 = 41$	$26+24-38 = 12$	$29+32-19 = 42$	$38+33-18 = 53$	$15+40-11 = 44$

Caminho: 3-1-6-5-4-7-8-2-3

Total: $9+16+9+26+24+19+18+11 = 132$