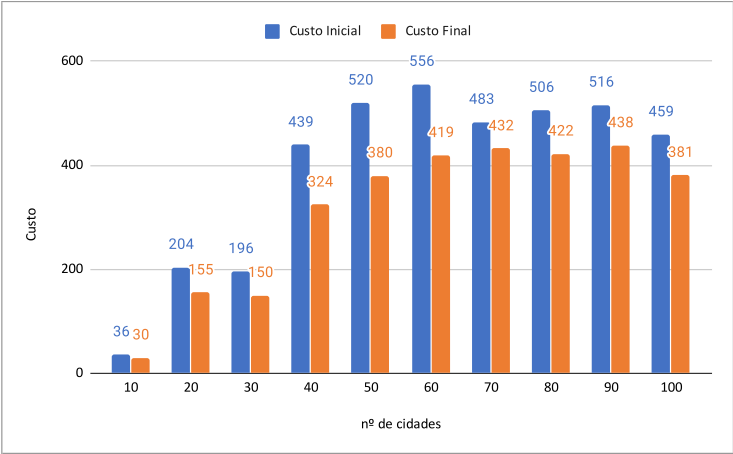
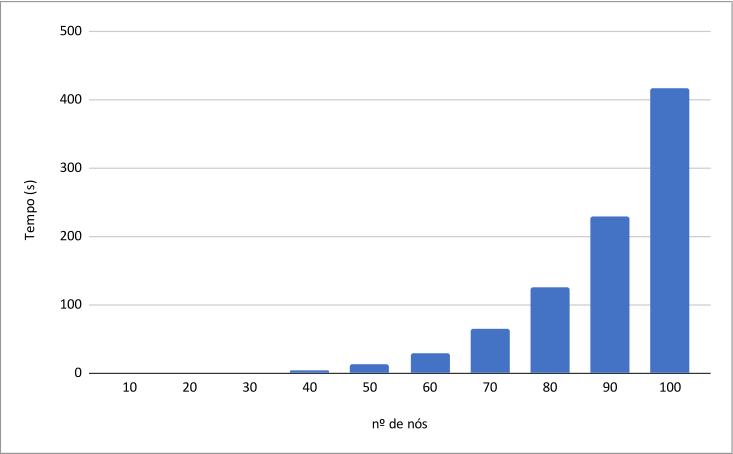


Metaheurística

Instância	Nº de Cidades	Custo Inicial	Custo Final	Melhoria (%)	Tempo (seg)
instance_10_1	10	33	29	12,12	0
instance_10_2	10	22	22	0,00	0,02
instance_10_3	10	36	30	16,67	0
instance_20_1	20	195	157	19,49	0,09
instance_20_2	20	204	155	24,02	0,09
instance_20_3	20	204	161	21,08	0,11
instance_30_1	30	231	215	6,93	0,73
instance_30_2	30	159	136	14,47	0,7
instance_30_3	30	196	150	23,47	0,7
instance_40_1	40	439	324	26,20	4,33
instance_40_2	40	310	263	15,16	3,96
instance_40_3	40	422	323	23,46	3,76
instance_50_1	50	316	295	6,65	12,35
instance_50_2	50	542	456	15,87	13,43
instance_50_3	50	520	380	26,92	12,12
instance_60_1	60	556	419	24,64	30,77
instance_60_2	60	567	444	21,69	29,69
instance_60_3	60	460	400	13,04	29,41
instance_70_1	70	355	323	9,01	62,71
instance_70_2	70	424	380	10,38	67,4
instance_70_3	70	483	432	10,56	62,66
instance_80_1	80	536	469	12,50	125,19
instance_80_2	80	506	422	16,60	126,23
instance_80_3	80	559	474	15,21	125,77
instance_90_1	90	525	487	7,24	232,36
instance_90_2	90	516	438	15,12	226,17
instance_90_3	90	458	391	14,63	229,64
instance_100_1	100	555	470	15,32	427,32
instance_100_2	100	459	381	16,99	410,52
instance_100_3	100	503	426	15,31	411,9

Nº de Cidades	Tempo Médio (seg)
10	0,01
20	0,10
30	0,71
40	4,02
50	12,63
60	29,96
70	64,26
80	125,73
90	229,39
100	416,58

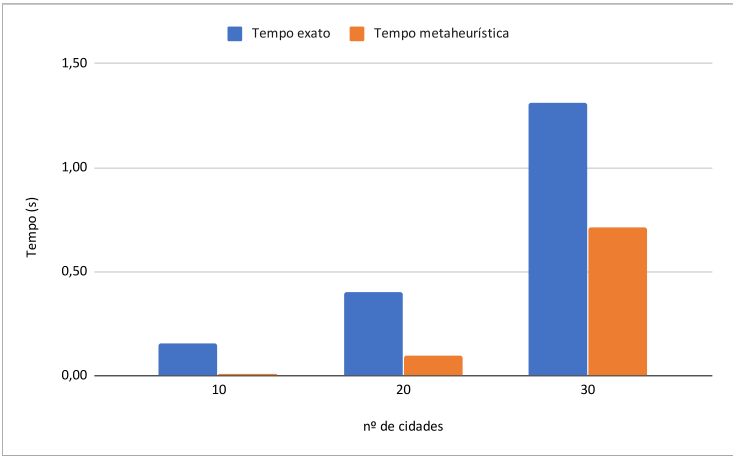
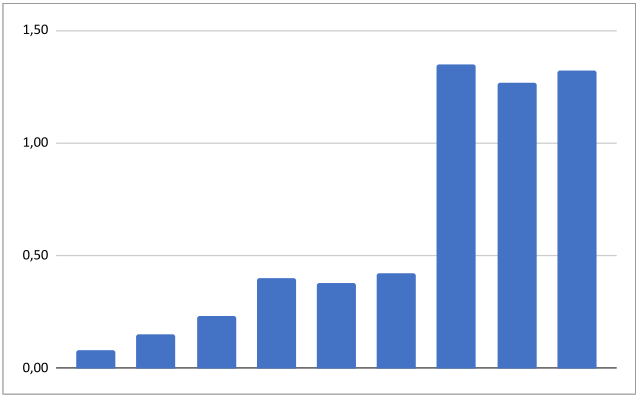
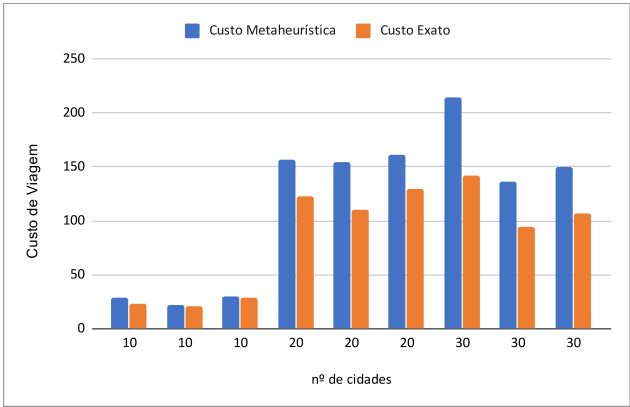
	Custo Inicial	Custo Final
10	36	30
20	204	155
30	196	150
40	439	324
50	520	380
60	556	419
70	483	432
80	506	422
90	516	438
100	459	381



Comparação

Instância	Nº de Cidades	Custo Inicial	Custo Metaheurística	Custo Exato	Melhora(%)	Tempo (seg)
instance_10_1	10	33	29	23,00	20,69	0,08
instance_10_2	10	22	22	21,00	4,55	0,15
instance_10_3	10	36	30	29,00	3,33	0,23
instance_20_1	20	195	157	123,00	21,66	0,4
instance_20_2	20	204	155	110,00	29,03	0,38
instance_20_3	20	204	161	129,00	19,88	0,42
instance_30_1	30	231	215	142,00	33,95	1,35
instance_30_2	30	159	136	95,00	30,15	1,27
instance_30_3	30	196	150	107,00	28,67	1,32

Nº de Cidades	Tempo Médio (seg)
10	0,15
20	0,4
30	1,31



Tempo exato	tempo metaheurística	Comparação	Tamanho
0,08	0,00	1	10
0,15	0,02	0,8666666667	10
0,23	0	1	10
0,40	0,09	0,775	20
0,38	0,09	0,7631578947	20
0,42	0,11	0,7380952381	20
1,35	0,73	0,4592592593	30
1,27	0,7	0,4488188976	30
1,32	0,7	0,4696969697	30