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1 C:\Users\Andrew\AppData\Local\Programs\Python\Python39\python.exe C:/Users/Andrew/Documents/UNIVERSITY/UBC/W21/CAD/Assignment_2/CPEN513_Assn2/src/main.py
2 Running: apex4.txt-0.8-10-25
3 1400
4 Initial temperature: 400.37946286705846
5 Temperature: 320.30357029364677; Cost: 42718.0;
Iterations: 351070
6 Temperature: 256.24285623491744; Cost: 43139.0;
Iterations: 702140
7 Temperature: 204.99428498793395; Cost: 41675.0;
Iterations: 1053210
8 Temperature: 163.99542799034717; Cost: 41916.0;
Iterations: 1404280
9 Temperature: 131.19634239227773; Cost: 42180.0;
Iterations: 1755350
10 Temperature: 104.95707391382219; Cost: 42107.0;
Iterations: 2106420
11 Temperature: 83.96565913105775; Cost: 41947.0;
Iterations: 2457490
12 Temperature: 67.1725273048462; Cost: 41048.0;
Iterations: 2808560
13 Temperature: 53.738021843876965; Cost: 40192.0;
Iterations: 3159630
14 Temperature: 42.99041747510157; Cost: 39807.0;
Iterations: 3510700
15 Temperature: 34.39233398008126; Cost: 39274.0;
Iterations: 3861770
16 Temperature: 27.51386718406501; Cost: 37399.0;
Iterations: 4212840
17 Temperature: 22.01109374725201; Cost: 36597.0;
Iterations: 4563910
18 Temperature: 17.608874997801607; Cost: 34847.0;
Iterations: 4914980
19 Temperature: 14.087099998241285; Cost: 32373.0;
Iterations: 5266050
20 Temperature: 11.269679998593029; Cost: 28959.0;
Iterations: 5617120
21 Temperature: 9.015743998874424; Cost: 26782.0;
Iterations: 5968190
22 Temperature: 7.212595199099539; Cost: 24436.0;
Iterations: 6319260
23 Temperature: 5.770076159279632; Cost: 21855.0;
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23 Iterations: 6670330
24 Temperature: 4.616060927423706; Cost: 19748.0;
   Iterations: 7021400
25 Temperature: 3.692848741938965; Cost: 17878.0;
   Iterations: 7372470
26 Temperature: 2.9542789935511724; Cost: 16536.0;
   Iterations: 7723540
27 Temperature: 2.363423194840938; Cost: 15414.0;
   Iterations: 8074610
28 Temperature: 1.8907385558727505; Cost: 14122.0;
   Iterations: 8425680
29 Temperature: 1.5125908446982006; Cost: 13206.0;
   Iterations: 8776750
30 Temperature: 1.2100726757585605; Cost: 12605.0;
   Iterations: 9127820
31 Temperature: 0.9680581406068485; Cost: 12036.0;
   Iterations: 9478890
32 Temperature: 0.7744465124854788; Cost: 11613.0;
   Iterations: 9829960
33 Temperature: 0.619557209988383; Cost: 11318.0;
   Iterations: 10181030
34 Temperature: 0.4956457679907065; Cost: 11051.0;
   Iterations: 10532100
35 Temperature: 0.3965166143925652; Cost: 10867.0;
   Iterations: 10883170
36 Temperature: 0.3172132915140522; Cost: 10758.0;
   Iterations: 11234240
37 Temperature: 0.25377063321124177; Cost: 10663.0;
   Iterations: 11585310
38 Temperature: 0.20301650656899342; Cost: 10580.0;
   Iterations: 11936380
39 Temperature: 0.16241320525519476; Cost: 10527.0;
   Iterations: 12287450
40 Temperature: 0.1299305642041558; Cost: 10487.0;
   Iterations: 12638520
41 Final cost: 10487.0
42 Total iterations: 12638520
43 Took 931.3630256652832
44 Running: apex4.txt-0.8-10-50
45 1400
46 Initial temperature: 400.37946286705846
47 Temperature: 320.30357029364677; Cost: 43290.0;
   Iterations: 702139
48 Temperature: 256.24285623491744; Cost: 43407.0;
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48 Iterations: 1404278
49 Temperature: 204.99428498793395; Cost: 42674.0;
   Iterations: 2106417
50 Temperature: 163.99542799034717; Cost: 43382.0;
   Iterations: 2808556
51 Temperature: 131.19634239227773; Cost: 42418.0;
   Iterations: 3510695
52 Temperature: 104.95707391382219; Cost: 41765.0;
   Iterations: 4212834
53 Temperature: 83.96565913105775; Cost: 40423.0;
   Iterations: 4914973
54 Temperature: 67.1725273048462; Cost: 41446.0;
   Iterations: 5617112
55 Temperature: 53.738021843876965; Cost: 40042.0;
   Iterations: 6319251
56 Temperature: 42.99041747510157; Cost: 39088.0;
   Iterations: 7021390
57 Temperature: 34.39233398008126; Cost: 38907.0;
   Iterations: 7723529
58 Temperature: 27.51386718406501; Cost: 37717.0;
   Iterations: 8425668
59 Temperature: 22.01109374725201; Cost: 36112.0;
   Iterations: 9127807
60 Temperature: 17.608874997801607; Cost: 34144.0;
   Iterations: 9829946
61 Temperature: 14.087099998241285; Cost: 32989.0;
   Iterations: 10532085
62 Temperature: 11.269679998593029; Cost: 29563.0;
   Iterations: 11234224
63 Temperature: 9.015743998874424; Cost: 26643.0;
   Iterations: 11936363
64 Temperature: 7.212595199099539; Cost: 23923.0;
   Iterations: 12638502
65 Temperature: 5.770076159279632; Cost: 22373.0;
   Iterations: 13340641
66 Temperature: 4.616060927423706; Cost: 19849.0;
   Iterations: 14042780
67 Temperature: 3.692848741938965; Cost: 18146.0;
   Iterations: 14744919
68 Temperature: 2.9542789935511724; Cost: 16207.0;
   Iterations: 15447058
69 Temperature: 2.363423194840938; Cost: 14864.0;
   Iterations: 16149197
70 Temperature: 1.8907385558727505; Cost: 13911.0;
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70 Iterations: 16851336
71 Temperature: 1.5125908446982006; Cost: 12902.0;
   Iterations: 17553475
72 Temperature: 1.2100726757585605; Cost: 12294.0;
   Iterations: 18255614
73 Temperature: 0.9680581406068485; Cost: 11789.0;
   Iterations: 18957753
74 Temperature: 0.7744465124854788; Cost: 11393.0;
   Iterations: 19659892
75 Temperature: 0.619557209988383; Cost: 11009.0;
   Iterations: 20362031
76 Temperature: 0.4956457679907065; Cost: 10756.0;
   Iterations: 21064170
77 Temperature: 0.3965166143925652; Cost: 10579.0;
   Iterations: 21766309
78 Temperature: 0.3172132915140522; Cost: 10431.0;
   Iterations: 22468448
79 Temperature: 0.25377063321124177; Cost: 10356.0;
   Iterations: 23170587
80 Temperature: 0.20301650656899342; Cost: 10275.0;
   Iterations: 23872726
81 Temperature: 0.16241320525519476; Cost: 10209.0;
   Iterations: 24574865
82 Temperature: 0.1299305642041558; Cost: 10165.0;
   Iterations: 25277004
83 Final cost: 10165.0
84 Total iterations: 25277004
85 Took 1891.7691452503204
86 Running: apex4.txt-0.8-10-75
87 1400
88 Initial temperature: 400.37946286705846
89 Temperature: 320.30357029364677; Cost: 43234.0;
   Iterations: 1053209
90 Temperature: 256.24285623491744; Cost: 42819.0;
   Iterations: 2106418
91 Temperature: 204.99428498793395; Cost: 43461.0;
   Iterations: 3159627
92 Temperature: 163.99542799034717; Cost: 41575.0;
   Iterations: 4212836
93 Temperature: 131.19634239227773; Cost: 42774.0;
   Iterations: 5266045
94 Temperature: 104.95707391382219; Cost: 41894.0;
   Iterations: 6319254
95 Temperature: 83.96565913105775; Cost: 42265.0;
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95 Iterations: 7372463
96 Temperature: 67.1725273048462; Cost: 41270.0;
   Iterations: 8425672
97 Temperature: 53.738021843876965; Cost: 40581.0;
   Iterations: 9478881
98 Temperature: 42.99041747510157; Cost: 39107.0;
   Iterations: 10532090
99 Temperature: 34.39233398008126; Cost: 38884.0;
   Iterations: 11585299
100 Temperature: 27.51386718406501; Cost: 37708.0;
   Iterations: 12638508
101 Temperature: 22.01109374725201; Cost: 36491.0;
   Iterations: 13691717
102 Temperature: 17.608874997801607; Cost: 34362.0;
   Iterations: 14744926
103 Temperature: 14.087099998241285; Cost: 32915.0;
   Iterations: 15798135
104 Temperature: 11.269679998593029; Cost: 29286.0;
   Iterations: 16851344
105 Temperature: 9.015743998874424; Cost: 26956.0;
   Iterations: 17904553
106 Temperature: 7.212595199099539; Cost: 24033.0;
   Iterations: 18957762
107 Temperature: 5.770076159279632; Cost: 21563.0;
   Iterations: 20010971
108 Temperature: 4.616060927423706; Cost: 20160.0;
   Iterations: 21064180
109 Temperature: 3.692848741938965; Cost: 17925.0;
   Iterations: 22117389
110 Temperature: 2.9542789935511724; Cost: 16386.0;
   Iterations: 23170598
111 Temperature: 2.363423194840938; Cost: 14821.0;
   Iterations: 24223807
112 Temperature: 1.8907385558727505; Cost: 14020.0;
   Iterations: 25277016
113 Temperature: 1.5125908446982006; Cost: 12898.0;
   Iterations: 26330225
114 Temperature: 1.2100726757585605; Cost: 12314.0;
   Iterations: 27383434
115 Temperature: 0.9680581406068485; Cost: 11794.0;
   Iterations: 28436643
116 Temperature: 0.7744465124854788; Cost: 11297.0;
   Iterations: 29489852
117 Temperature: 0.619557209988383; Cost: 10918.0;
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117 Iterations: 30543061
118 Temperature: 0.4956457679907065; Cost: 10669.0;
    Iterations: 31596270
119 Temperature: 0.3965166143925652; Cost: 10472.0;
    Iterations: 32649479
120 Temperature: 0.3172132915140522; Cost: 10313.0;
    Iterations: 33702688
121 Temperature: 0.25377063321124177; Cost: 10213.0;
    Iterations: 34755897
122 Temperature: 0.20301650656899342; Cost: 10146.0;
    Iterations: 35809106
123 Temperature: 0.16241320525519476; Cost: 10091.0;
    Iterations: 36862315
124 Temperature: 0.1299305642041558; Cost: 10053.0;
    Iterations: 37915524
125 Final cost: 10053.0
126 Total iterations: 37915524
127 Took 2808.4761695861816
128 Running: apex4.txt-0.8-20-25
129 1400
130 Initial temperature: 800.7589257341169
131 Temperature: 640.6071405872935; Cost: 43140.0;
    Iterations: 351070
132 Temperature: 512.4857124698349; Cost: 43398.0;
    Iterations: 702140
133 Temperature: 409.9885699758679; Cost: 42926.0;
    Iterations: 1053210
134 Temperature: 327.99085598069433; Cost: 43622.0;
    Iterations: 1404280
135 Temperature: 262.39268478455546; Cost: 43557.0;
    Iterations: 1755350
136 Temperature: 209.91414782764437; Cost: 42370.0;
    Iterations: 2106420
137 Temperature: 167.9313182621155; Cost: 42594.0;
    Iterations: 2457490
138 Temperature: 134.3450546096924; Cost: 42731.0;
    Iterations: 2808560
139 Temperature: 107.47604368775393; Cost: 41982.0;
    Iterations: 3159630
140 Temperature: 85.98083495020315; Cost: 41766.0;
    Iterations: 3510700
141 Temperature: 68.78466796016252; Cost: 40378.0;
    Iterations: 3861770
142 Temperature: 55.02773436813002; Cost: 40190.0;
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142 Iterations: 4212840
143 Temperature: 44.02218749450402; Cost: 39724.0;
    Iterations: 4563910
144 Temperature: 35.217749995603214; Cost: 38940.0;
    Iterations: 4914980
145 Temperature: 28.17419999648257; Cost: 37900.0;
    Iterations: 5266050
146 Temperature: 22.539359997186057; Cost: 35916.0;
    Iterations: 5617120
147 Temperature: 18.031487997748847; Cost: 34605.0;
    Iterations: 5968190
148 Temperature: 14.425190398199078; Cost: 32820.0;
    Iterations: 6319260
149 Temperature: 11.540152318559263; Cost: 29813.0;
    Iterations: 6670330
150 Temperature: 9.232121854847412; Cost: 26917.0;
    Iterations: 7021400
151 Temperature: 7.38569748387793; Cost: 24204.0;
    Iterations: 7372470
152 Temperature: 5.908557987102345; Cost: 22750.0;
    Iterations: 7723540
153 Temperature: 4.726846389681876; Cost: 20120.0;
    Iterations: 8074610
154 Temperature: 3.781477111745501; Cost: 18417.0;
    Iterations: 8425680
155 Temperature: 3.025181689396401; Cost: 16849.0;
    Iterations: 8776750
156 Temperature: 2.420145351517121; Cost: 15313.0;
    Iterations: 9127820
157 Temperature: 1.936116281213697; Cost: 14267.0;
    Iterations: 9478890
158 Temperature: 1.5488930249709576; Cost: 13347.0;
    Iterations: 9829960
159 Temperature: 1.239114419976766; Cost: 12608.0;
    Iterations: 10181030
160 Temperature: 0.991291535981413; Cost: 11982.0;
    Iterations: 10532100
161 Temperature: 0.7930332287851304; Cost: 11658.0;
    Iterations: 10883170
162 Temperature: 0.6344265830281044; Cost: 11364.0;
    Iterations: 11234240
163 Temperature: 0.5075412664224835; Cost: 11074.0;
    Iterations: 11585310
164 Temperature: 0.40603301313798684; Cost: 10893.0;
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164 Iterations: 11936380
165 Temperature: 0.3248264105103895; Cost: 10764.0;
    Iterations: 12287450
166 Temperature: 0.2598611284083116; Cost: 10644.0;
    Iterations: 12638520
167 Temperature: 0.20788890272664928; Cost: 10561.0;
    Iterations: 12989590
168 Temperature: 0.16631112218131944; Cost: 10496.0;
    Iterations: 13340660
169 Temperature: 0.13304889774505554; Cost: 10434.0;
    Iterations: 13691730
170 Temperature: 0.10643911819604444; Cost: 10401.0;
    Iterations: 14042800
171 Final cost: 10401.0
172 Total iterations: 14042800
173 Took 1038.9400885105133
174 Running: apex4.txt-0.8-20-50
175 1400
176 Initial temperature: 800.7589257341169
177 Temperature: 640.6071405872935; Cost: 43308.0;
    Iterations: 702139
178 Temperature: 512.4857124698349; Cost: 43466.0;
    Iterations: 1404278
179 Temperature: 409.9885699758679; Cost: 43056.0;
    Iterations: 2106417
180 Temperature: 327.99085598069433; Cost: 43899.0;
    Iterations: 2808556
181 Temperature: 262.39268478455546; Cost: 43139.0;
    Iterations: 3510695
182 Temperature: 209.91414782764437; Cost: 41821.0;
    Iterations: 4212834
183 Temperature: 167.9313182621155; Cost: 41956.0;
    Iterations: 4914973
184 Temperature: 134.3450546096924; Cost: 42349.0;
    Iterations: 5617112
185 Temperature: 107.47604368775393; Cost: 41407.0;
    Iterations: 6319251
186 Temperature: 85.98083495020315; Cost: 41752.0;
    Iterations: 7021390
187 Temperature: 68.78466796016252; Cost: 41232.0;
    Iterations: 7723529
188 Temperature: 55.02773436813002; Cost: 40438.0;
    Iterations: 8425668
189 Temperature: 44.02218749450402; Cost: 39206.0;
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189 Iterations: 9127807
190 Temperature: 35.217749995603214; Cost: 38817.0;
    Iterations: 9829946
191 Temperature: 28.17419999648257; Cost: 37569.0;
    Iterations: 10532085
192 Temperature: 22.539359997186057; Cost: 36325.0;
    Iterations: 11234224
193 Temperature: 18.031487997748847; Cost: 34465.0;
    Iterations: 11936363
194 Temperature: 14.425190398199078; Cost: 32575.0;
    Iterations: 12638502
195 Temperature: 11.540152318559263; Cost: 30276.0;
    Iterations: 13340641
196 Temperature: 9.232121854847412; Cost: 27398.0;
    Iterations: 14042780
197 Temperature: 7.38569748387793; Cost: 24597.0;
    Iterations: 14744919
198 Temperature: 5.908557987102345; Cost: 21895.0;
    Iterations: 15447058
199 Temperature: 4.726846389681876; Cost: 20222.0;
    Iterations: 16149197
200 Temperature: 3.781477111745501; Cost: 18315.0;
    Iterations: 16851336
201 Temperature: 3.025181689396401; Cost: 16463.0;
    Iterations: 17553475
202 Temperature: 2.420145351517121; Cost: 15066.0;
    Iterations: 18255614
203 Temperature: 1.936116281213697; Cost: 14118.0;
    Iterations: 18957753
204 Temperature: 1.5488930249709576; Cost: 13116.0;
    Iterations: 19659892
205 Temperature: 1.239114419976766; Cost: 12457.0;
    Iterations: 20362031
206 Temperature: 0.991291535981413; Cost: 12037.0;
    Iterations: 21064170
207 Temperature: 0.7930332287851304; Cost: 11526.0;
    Iterations: 21766309
208 Temperature: 0.6344265830281044; Cost: 11227.0;
    Iterations: 22468448
209 Temperature: 0.5075412664224835; Cost: 10924.0;
    Iterations: 23170587
210 Temperature: 0.40603301313798684; Cost: 10735.0;
    Iterations: 23872726
211 Temperature: 0.3248264105103895; Cost: 10593.0;
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211 Iterations: 24574865
212 Temperature: 0.2598611284083116; Cost: 10484.0;
    Iterations: 25277004
213 Temperature: 0.20788890272664928; Cost: 10404.0;
    Iterations: 25979143
214 Temperature: 0.16631112218131944; Cost: 10335.0;
    Iterations: 26681282
215 Temperature: 0.13304889774505554; Cost: 10293.0;
    Iterations: 27383421
216 Final cost: 10293.0
217 Total iterations: 27383421
218 Took 2035.1039836406708
219 Running: apex4.txt-0.8-20-75
220 1400
221 Initial temperature: 800.7589257341169
222 Temperature: 640.6071405872935; Cost: 43313.0;
    Iterations: 1053209
223 Temperature: 512.4857124698349; Cost: 43198.0;
    Iterations: 2106418
224 Temperature: 409.9885699758679; Cost: 43170.0;
    Iterations: 3159627
225 Temperature: 327.99085598069433; Cost: 42289.0;
    Iterations: 4212836
226 Temperature: 262.39268478455546; Cost: 43475.0;
    Iterations: 5266045
227 Temperature: 209.91414782764437; Cost: 42303.0;
    Iterations: 6319254
228 Temperature: 167.9313182621155; Cost: 43156.0;
    Iterations: 7372463
229 Temperature: 134.3450546096924; Cost: 42104.0;
    Iterations: 8425672
230 Temperature: 107.47604368775393; Cost: 41268.0;
    Iterations: 9478881
231 Temperature: 85.98083495020315; Cost: 40828.0;
    Iterations: 10532090
232 Temperature: 68.78466796016252; Cost: 40770.0;
    Iterations: 11585299
233 Temperature: 55.02773436813002; Cost: 41045.0;
    Iterations: 12638508
234 Temperature: 44.02218749450402; Cost: 39262.0;
    Iterations: 13691717
235 Temperature: 35.217749995603214; Cost: 38562.0;
    Iterations: 14744926
236 Temperature: 28.17419999648257; Cost: 37365.0;
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236 Iterations: 15798135
237 Temperature: 22.539359997186057; Cost: 37256.0;
    Iterations: 16851344
238 Temperature: 18.031487997748847; Cost: 34665.0;
    Iterations: 17904553
239 Temperature: 14.425190398199078; Cost: 32670.0;
    Iterations: 18957762
240 Temperature: 11.540152318559263; Cost: 29635.0;
    Iterations: 20010971
241 Temperature: 9.232121854847412; Cost: 27710.0;
    Iterations: 21064180
242 Temperature: 7.38569748387793; Cost: 24478.0;
    Iterations: 22117389
243 Temperature: 5.908557987102345; Cost: 22249.0;
    Iterations: 23170598
244 Temperature: 4.726846389681876; Cost: 20504.0;
    Iterations: 24223807
245 Temperature: 3.781477111745501; Cost: 18245.0;
    Iterations: 25277016
246 Temperature: 3.025181689396401; Cost: 16511.0;
    Iterations: 26330225
247 Temperature: 2.420145351517121; Cost: 14921.0;
    Iterations: 27383434
248 Temperature: 1.936116281213697; Cost: 13904.0;
    Iterations: 28436643
249 Temperature: 1.5488930249709576; Cost: 13155.0;
    Iterations: 29489852
250 Temperature: 1.239114419976766; Cost: 12296.0;
    Iterations: 30543061
251 Temperature: 0.991291535981413; Cost: 11759.0;
    Iterations: 31596270
252 Temperature: 0.7930332287851304; Cost: 11304.0;
    Iterations: 32649479
253 Temperature: 0.6344265830281044; Cost: 10927.0;
    Iterations: 33702688
254 Temperature: 0.5075412664224835; Cost: 10646.0;
    Iterations: 34755897
255 Temperature: 0.40603301313798684; Cost: 10446.0;
    Iterations: 35809106
256 Temperature: 0.3248264105103895; Cost: 10295.0;
    Iterations: 36862315
257 Temperature: 0.2598611284083116; Cost: 10213.0;
    Iterations: 37915524
258 Temperature: 0.20788890272664928; Cost: 10135.0;
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258 Iterations: 38968733
259 Temperature: 0.16631112218131944; Cost: 10082.0;
    Iterations: 40021942
260 Temperature: 0.13304889774505554; Cost: 10052.0;
    Iterations: 41075151
261 Final cost: 10052.0
262 Total iterations: 41075151
263 Took 3199.5267894268036
264 Running: apex4.txt-0.8-30-25
265 1400
266 Initial temperature: 1201.1383886011754
267 Temperature: 960.9107108809403; Cost: 43371.0;
    Iterations: 351070
268 Temperature: 768.7285687047523; Cost: 43502.0;
    Iterations: 702140
269 Temperature: 614.9828549638019; Cost: 43416.0;
    Iterations: 1053210
270 Temperature: 491.98628397104153; Cost: 43990.0;
    Iterations: 1404280
271 Temperature: 393.58902717683327; Cost: 43261.0;
    Iterations: 1755350
272 Temperature: 314.8712217414666; Cost: 42627.0;
    Iterations: 2106420
273 Temperature: 251.8969773931733; Cost: 43119.0;
    Iterations: 2457490
274 Temperature: 201.51758191453865; Cost: 43396.0;
    Iterations: 2808560
275 Temperature: 161.21406553163092; Cost: 42492.0;
    Iterations: 3159630
276 Temperature: 128.97125242530475; Cost: 42789.0;
    Iterations: 3510700
277 Temperature: 103.17700194024381; Cost: 42335.0;
    Iterations: 3861770
278 Temperature: 82.54160155219506; Cost: 40755.0;
    Iterations: 4212840
279 Temperature: 66.03328124175606; Cost: 41424.0;
    Iterations: 4563910
280 Temperature: 52.82662499340485; Cost: 39539.0;
    Iterations: 4914980
281 Temperature: 42.261299994723885; Cost: 39426.0;
    Iterations: 5266050
282 Temperature: 33.80903999577911; Cost: 38019.0;
    Iterations: 5617120
283 Temperature: 27.04723199662329; Cost: 37189.0;
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283 Iterations: 5968190
284 Temperature: 21.63778559729863; Cost: 35952.0;
    Iterations: 6319260
285 Temperature: 17.310228477838905; Cost: 34053.0;
    Iterations: 6670330
286 Temperature: 13.848182782271124; Cost: 32546.0;
    Iterations: 7021400
287 Temperature: 11.0785462258169; Cost: 29251.0;
    Iterations: 7372470
288 Temperature: 8.86283698065352; Cost: 26813.0;
    Iterations: 7723540
289 Temperature: 7.090269584522817; Cost: 24169.0;
    Iterations: 8074610
290 Temperature: 5.672215667618254; Cost: 21610.0;
    Iterations: 8425680
291 Temperature: 4.537772534094603; Cost: 19602.0;
    Iterations: 8776750
292 Temperature: 3.6302180272756823; Cost: 17805.0;
    Iterations: 9127820
293 Temperature: 2.904174421820546; Cost: 16507.0;
    Iterations: 9478890
294 Temperature: 2.323339537456437; Cost: 14961.0;
    Iterations: 9829960
295 Temperature: 1.8586716299651496; Cost: 13848.0;
    Iterations: 10181030
296 Temperature: 1.4869373039721197; Cost: 13142.0;
    Iterations: 10532100
297 Temperature: 1.1895498431776959; Cost: 12448.0;
    Iterations: 10883170
298 Temperature: 0.9516398745421567; Cost: 11962.0;
    Iterations: 11234240
299 Temperature: 0.7613118996337254; Cost: 11483.0;
    Iterations: 11585310
300 Temperature: 0.6090495197069803; Cost: 11153.0;
    Iterations: 11936380
301 Temperature: 0.4872396157655843; Cost: 10914.0;
    Iterations: 12287450
302 Temperature: 0.38979169261246743; Cost: 10765.0;
    Iterations: 12638520
303 Temperature: 0.311833354089974; Cost: 10636.0;
    Iterations: 12989590
304 Temperature: 0.24946668327197918; Cost: 10534.0;
    Iterations: 13340660
305 Temperature: 0.19957334661758336; Cost: 10458.0;
```

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305 Iterations: 13691730
306 Temperature: 0.1596586772940667; Cost: 10402.0;
    Iterations: 14042800
307 Temperature: 0.12772694183525335; Cost: 10357.0;
    Iterations: 14393870
308 Final cost: 10357.0
309 Total iterations: 14393870
310 Took 1102.4730560779572
311 Running: apex4.txt-0.8-30-50
312 1400
313 Initial temperature: 1201.1383886011754
314 Temperature: 960.9107108809403; Cost: 43309.0;
    Iterations: 702139
315 Temperature: 768.7285687047523; Cost: 43504.0;
    Iterations: 1404278
316 Temperature: 614.9828549638019; Cost: 43860.0;
    Iterations: 2106417
317 Temperature: 491.98628397104153; Cost: 43335.0;
    Iterations: 2808556
318 Temperature: 393.58902717683327; Cost: 43348.0;
    Iterations: 3510695
319 Temperature: 314.8712217414666; Cost: 41956.0;
    Iterations: 4212834
320 Temperature: 251.8969773931733; Cost: 41996.0;
    Iterations: 4914973
321 Temperature: 201.51758191453865; Cost: 43043.0;
    Iterations: 5617112
322 Temperature: 161.21406553163092; Cost: 42124.0;
    Iterations: 6319251
323 Temperature: 128.97125242530475; Cost: 42423.0;
    Iterations: 7021390
324 Temperature: 103.17700194024381; Cost: 42392.0;
    Iterations: 7723529
325 Temperature: 82.54160155219506; Cost: 41290.0;
    Iterations: 8425668
326 Temperature: 66.03328124175606; Cost: 40770.0;
    Iterations: 9127807
327 Temperature: 52.82662499340485; Cost: 40019.0;
    Iterations: 9829946
328 Temperature: 42.261299994723885; Cost: 38774.0;
    Iterations: 10532085
329 Temperature: 33.80903999577911; Cost: 39340.0;
    Iterations: 11234224
330 Temperature: 27.04723199662329; Cost: 37326.0;
```

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330 Iterations: 11936363
331 Temperature: 21.63778559729863; Cost: 36062.0;
    Iterations: 12638502
332 Temperature: 17.310228477838905; Cost: 34969.0;
    Iterations: 13340641
333 Temperature: 13.848182782271124; Cost: 32879.0;
    Iterations: 14042780
334 Temperature: 11.0785462258169; Cost: 28894.0;
    Iterations: 14744919
335 Temperature: 8.86283698065352; Cost: 26595.0;
    Iterations: 15447058
336 Temperature: 7.090269584522817; Cost: 24059.0;
    Iterations: 16149197
337 Temperature: 5.672215667618254; Cost: 22165.0;
    Iterations: 16851336
338 Temperature: 4.537772534094603; Cost: 19860.0;
    Iterations: 17553475
339 Temperature: 3.6302180272756823; Cost: 17743.0;
    Iterations: 18255614
340 Temperature: 2.904174421820546; Cost: 16265.0;
    Iterations: 18957753
341 Temperature: 2.323339537456437; Cost: 14854.0;
    Iterations: 19659892
342 Temperature: 1.8586716299651496; Cost: 13763.0;
    Iterations: 20362031
343 Temperature: 1.4869373039721197; Cost: 12966.0;
    Iterations: 21064170
344 Temperature: 1.1895498431776959; Cost: 12177.0;
    Iterations: 21766309
345 Temperature: 0.9516398745421567; Cost: 11722.0;
    Iterations: 22468448
346 Temperature: 0.7613118996337254; Cost: 11368.0;
    Iterations: 23170587
347 Temperature: 0.6090495197069803; Cost: 11032.0;
    Iterations: 23872726
348 Temperature: 0.4872396157655843; Cost: 10775.0;
    Iterations: 24574865
349 Temperature: 0.38979169261246743; Cost: 10544.0;
    Iterations: 25277004
350 Temperature: 0.311833354089974; Cost: 10396.0;
    Iterations: 25979143
351 Temperature: 0.24946668327197918; Cost: 10296.0;
    Iterations: 26681282
352 Temperature: 0.19957334661758336; Cost: 10216.0;
```

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352 Iterations: 27383421
353 Temperature: 0.1596586772940667; Cost: 10163.0;
    Iterations: 28085560
354 Temperature: 0.12772694183525335; Cost: 10130.0;
    Iterations: 28787699
355 Final cost: 10130.0
356 Total iterations: 28787699
357 Took 2192.6580448150635
358 Running: apex4.txt-0.8-30-75
359 1400
360 Initial temperature: 1201.1383886011754
361 Temperature: 960.9107108809403; Cost: 43464.0;
    Iterations: 1053209
362 Temperature: 768.7285687047523; Cost: 43746.0;
    Iterations: 2106418
363 Temperature: 614.9828549638019; Cost: 43422.0;
    Iterations: 3159627
364 Temperature: 491.98628397104153; Cost: 42625.0;
    Iterations: 4212836
365 Temperature: 393.58902717683327; Cost: 43843.0;
    Iterations: 5266045
366 Temperature: 314.8712217414666; Cost: 42859.0;
    Iterations: 6319254
367 Temperature: 251.8969773931733; Cost: 44357.0;
    Iterations: 7372463
368 Temperature: 201.51758191453865; Cost: 42735.0;
    Iterations: 8425672
369 Temperature: 161.21406553163092; Cost: 42373.0;
    Iterations: 9478881
370 Temperature: 128.97125242530475; Cost: 41984.0;
    Iterations: 10532090
371 Temperature: 103.17700194024381; Cost: 41773.0;
    Iterations: 11585299
372 Temperature: 82.54160155219506; Cost: 41905.0;
    Iterations: 12638508
373 Temperature: 66.03328124175606; Cost: 40912.0;
    Iterations: 13691717
374 Temperature: 52.82662499340485; Cost: 40293.0;
    Iterations: 14744926
375 Temperature: 42.261299994723885; Cost: 39564.0;
    Iterations: 15798135
376 Temperature: 33.80903999577911; Cost: 38548.0;
    Iterations: 16851344
377 Temperature: 27.04723199662329; Cost: 37184.0;
```

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377 Iterations: 17904553
378 Temperature: 21.63778559729863; Cost: 36018.0;
    Iterations: 18957762
379 Temperature: 17.310228477838905; Cost: 33794.0;
    Iterations: 20010971
380 Temperature: 13.848182782271124; Cost: 32570.0;
    Iterations: 21064180
381 Temperature: 11.0785462258169; Cost: 30642.0;
    Iterations: 22117389
382 Temperature: 8.86283698065352; Cost: 26661.0;
    Iterations: 23170598
383 Temperature: 7.090269584522817; Cost: 24405.0;
    Iterations: 24223807
384 Temperature: 5.672215667618254; Cost: 21886.0;
    Iterations: 25277016
385 Temperature: 4.537772534094603; Cost: 19995.0;
    Iterations: 26330225
386 Temperature: 3.6302180272756823; Cost: 17723.0;
    Iterations: 27383434
387 Temperature: 2.904174421820546; Cost: 16154.0;
    Iterations: 28436643
388 Temperature: 2.323339537456437; Cost: 15127.0;
    Iterations: 29489852
389 Temperature: 1.8586716299651496; Cost: 13648.0;
    Iterations: 30543061
390 Temperature: 1.4869373039721197; Cost: 12980.0;
    Iterations: 31596270
391 Temperature: 1.1895498431776959; Cost: 12258.0;
    Iterations: 32649479
392 Temperature: 0.9516398745421567; Cost: 11773.0;
    Iterations: 33702688
393 Temperature: 0.7613118996337254; Cost: 11309.0;
    Iterations: 34755897
394 Temperature: 0.6090495197069803; Cost: 10951.0;
    Iterations: 35809106
395 Temperature: 0.4872396157655843; Cost: 10768.0;
    Iterations: 36862315
396 Temperature: 0.38979169261246743; Cost: 10529.0;
    Iterations: 37915524
397 Temperature: 0.311833354089974; Cost: 10407.0;
    Iterations: 38968733
398 Temperature: 0.24946668327197918; Cost: 10290.0;
    Iterations: 40021942
399 Temperature: 0.19957334661758336; Cost: 10210.0;
```

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399 Iterations: 41075151
400 Temperature: 0.1596586772940667; Cost: 10171.0;
    Iterations: 42128360
401 Final cost: 10171.0
402 Total iterations: 42128360
403 Took 3211.2344603538513
404 Running: apex4.txt-0.85-10-25
405 1400
406 Initial temperature: 400.37946286705846
407 Temperature: 340.3225434369997; Cost: 42718.0;
    Iterations: 351070
408 Temperature: 289.2741619214497; Cost: 43096.0;
    Iterations: 702140
409 Temperature: 245.88303763323225; Cost: 42771.0;
    Iterations: 1053210
410 Temperature: 209.0005819882474; Cost: 42767.0;
    Iterations: 1404280
411 Temperature: 177.65049469001028; Cost: 42728.0;
    Iterations: 1755350
412 Temperature: 151.00292048650874; Cost: 41992.0;
    Iterations: 2106420
413 Temperature: 128.3524824135324; Cost: 42023.0;
    Iterations: 2457490
414 Temperature: 109.09961005150255; Cost: 41935.0;
    Iterations: 2808560
415 Temperature: 92.73466854377716; Cost: 41208.0;
    Iterations: 3159630
416 Temperature: 78.82446826221059; Cost: 41827.0;
    Iterations: 3510700
417 Temperature: 67.000798022879; Cost: 41405.0;
    Iterations: 3861770
418 Temperature: 56.95067831944714; Cost: 40387.0;
    Iterations: 4212840
419 Temperature: 48.40807657153007; Cost: 39575.0;
    Iterations: 4563910
420 Temperature: 41.146865085800556; Cost: 39070.0;
    Iterations: 4914980
421 Temperature: 34.974835322930474; Cost: 38169.0;
    Iterations: 5266050
422 Temperature: 29.7286100244909; Cost: 37485.0;
    Iterations: 5617120
423 Temperature: 25.269318520817265; Cost: 36302.0;
    Iterations: 5968190
424 Temperature: 21.478920742694676; Cost: 35902.0;
```

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424 Iterations: 6319260
425 Temperature: 18.257082631290473; Cost: 34402.0;
    Iterations: 6670330
426 Temperature: 15.5185202365969; Cost: 33302.0;
    Iterations: 7021400
427 Temperature: 13.190742201107366; Cost: 30586.0;
    Iterations: 7372470
428 Temperature: 11.21213087094126; Cost: 28952.0;
    Iterations: 7723540
429 Temperature: 9.53031124030007; Cost: 27027.0;
    Iterations: 8074610
430 Temperature: 8.10076455425506; Cost: 24514.0;
    Iterations: 8425680
431 Temperature: 6.8856498711168; Cost: 23157.0;
    Iterations: 8776750
432 Temperature: 5.85280239044928; Cost: 21485.0;
    Iterations: 9127820
433 Temperature: 4.974882031881887; Cost: 19911.0;
    Iterations: 9478890
434 Temperature: 4.228649727099604; Cost: 18449.0;
    Iterations: 9829960
435 Temperature: 3.5943522680346636; Cost: 17202.0;
    Iterations: 10181030
436 Temperature: 3.055199427829464; Cost: 15995.0;
    Iterations: 10532100
437 Temperature: 2.596919513655044; Cost: 15338.0;
    Iterations: 10883170
438 Temperature: 2.2073815866067874; Cost: 14653.0;
    Iterations: 11234240
439 Temperature: 1.8762743486157691; Cost: 13825.0;
    Iterations: 11585310
440 Temperature: 1.5948331963234037; Cost: 13138.0;
    Iterations: 11936380
441 Temperature: 1.355608216874893; Cost: 12779.0;
    Iterations: 12287450
442 Temperature: 1.152266984343659; Cost: 12323.0;
    Iterations: 12638520
443 Temperature: 0.9794269366921101; Cost: 11889.0;
    Iterations: 12989590
444 Temperature: 0.8325128961882936; Cost: 11605.0;
    Iterations: 13340660
445 Temperature: 0.7076359617600495; Cost: 11363.0;
    Iterations: 13691730
446 Temperature: 0.601490567496042; Cost: 11145.0;
```

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446 Iterations: 14042800
447 Temperature: 0.5112669823716357; Cost: 10937.0;
    Iterations: 14393870
448 Temperature: 0.43457693501589034; Cost: 10770.0;
    Iterations: 14744940
449 Temperature: 0.36939039476350677; Cost: 10647.0;
    Iterations: 15096010
450 Temperature: 0.31398183554898074; Cost: 10561.0;
    Iterations: 15447080
451 Temperature: 0.2668845602166336; Cost: 10510.0;
    Iterations: 15798150
452 Final cost: 10510.0
453 Total iterations: 15798150
454 Took 1182.7218430042267
455 Running: apex4.txt-0.85-10-50
456 1400
457 Initial temperature: 400.37946286705846
458 Temperature: 340.3225434369997; Cost: 43290.0;
    Iterations: 702139
459 Temperature: 289.2741619214497; Cost: 43428.0;
    Iterations: 1404278
460 Temperature: 245.88303763323225; Cost: 42912.0;
    Iterations: 2106417
461 Temperature: 209.0005819882474; Cost: 43318.0;
    Iterations: 2808556
462 Temperature: 177.65049469001028; Cost: 42420.0;
    Iterations: 3510695
463 Temperature: 151.00292048650874; Cost: 40606.0;
    Iterations: 4212834
464 Temperature: 128.3524824135324; Cost: 41526.0;
    Iterations: 4914973
465 Temperature: 109.09961005150255; Cost: 42235.0;
    Iterations: 5617112
466 Temperature: 92.73466854377716; Cost: 41722.0;
    Iterations: 6319251
467 Temperature: 78.82446826221059; Cost: 41573.0;
    Iterations: 7021390
468 Temperature: 67.000798022879; Cost: 41122.0;
    Iterations: 7723529
469 Temperature: 56.95067831944714; Cost: 40055.0;
    Iterations: 8425668
470 Temperature: 48.40807657153007; Cost: 39932.0;
    Iterations: 9127807
471 Temperature: 41.146865085800556; Cost: 38830.0;
```

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471 Iterations: 9829946
472 Temperature: 34.974835322930474; Cost: 37839.0;
    Iterations: 10532085
473 Temperature: 29.7286100244909; Cost: 37636.0;
    Iterations: 11234224
474 Temperature: 25.269318520817265; Cost: 36429.0;
    Iterations: 11936363
475 Temperature: 21.478920742694676; Cost: 34824.0;
    Iterations: 12638502
476 Temperature: 18.257082631290473; Cost: 34422.0;
    Iterations: 13340641
477 Temperature: 15.5185202365969; Cost: 32155.0;
    Iterations: 14042780
478 Temperature: 13.190742201107366; Cost: 31128.0;
    Iterations: 14744919
479 Temperature: 11.21213087094126; Cost: 28078.0;
    Iterations: 15447058
480 Temperature: 9.53031124030007; Cost: 27021.0;
    Iterations: 16149197
481 Temperature: 8.10076455425506; Cost: 24893.0;
    Iterations: 16851336
482 Temperature: 6.8856498711168; Cost: 23436.0;
    Iterations: 17553475
483 Temperature: 5.85280239044928; Cost: 21010.0;
    Iterations: 18255614
484 Temperature: 4.974882031881887; Cost: 20417.0;
    Iterations: 18957753
485 Temperature: 4.228649727099604; Cost: 18608.0;
    Iterations: 19659892
486 Temperature: 3.5943522680346636; Cost: 17081.0;
    Iterations: 20362031
487 Temperature: 3.055199427829464; Cost: 16010.0;
    Iterations: 21064170
488 Temperature: 2.596919513655044; Cost: 15037.0;
    Iterations: 21766309
489 Temperature: 2.2073815866067874; Cost: 14303.0;
    Iterations: 22468448
490 Temperature: 1.8762743486157691; Cost: 13699.0;
    Iterations: 23170587
491 Temperature: 1.5948331963234037; Cost: 12979.0;
    Iterations: 23872726
492 Temperature: 1.355608216874893; Cost: 12379.0;
    Iterations: 24574865
493 Temperature: 1.152266984343659; Cost: 12056.0;
```

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493 Iterations: 25277004
494 Temperature: 0.9794269366921101; Cost: 11605.0;
    Iterations: 25979143
495 Temperature: 0.8325128961882936; Cost: 11341.0;
    Iterations: 26681282
496 Temperature: 0.7076359617600495; Cost: 11100.0;
    Iterations: 27383421
497 Temperature: 0.601490567496042; Cost: 10901.0;
    Iterations: 28085560
498 Temperature: 0.5112669823716357; Cost: 10658.0;
    Iterations: 28787699
499 Temperature: 0.43457693501589034; Cost: 10489.0;
    Iterations: 29489838
500 Temperature: 0.36939039476350677; Cost: 10356.0;
    Iterations: 30191977
501 Temperature: 0.31398183554898074; Cost: 10258.0;
    Iterations: 30894116
502 Temperature: 0.2668845602166336; Cost: 10183.0;
    Iterations: 31596255
503 Temperature: 0.22685187618413855; Cost: 10118.0;
    Iterations: 32298394
504 Temperature: 0.19282409475651777; Cost: 10085.0;
    Iterations: 33000533
505 Final cost: 10085.0
506 Total iterations: 33000533
507 Took 2546.223869085312
508 Running: apex4.txt-0.85-10-75
509 1400
510 Initial temperature: 400.37946286705846
511 Temperature: 340.3225434369997; Cost: 43234.0;
    Iterations: 1053209
512 Temperature: 289.2741619214497; Cost: 42962.0;
    Iterations: 2106418
513 Temperature: 245.88303763323225; Cost: 43193.0;
    Iterations: 3159627
514 Temperature: 209.0005819882474; Cost: 41722.0;
    Iterations: 4212836
515 Temperature: 177.65049469001028; Cost: 42355.0;
    Iterations: 5266045
516 Temperature: 151.00292048650874; Cost: 42258.0;
    Iterations: 6319254
517 Temperature: 128.3524824135324; Cost: 43004.0;
    Iterations: 7372463
518 Temperature: 109.09961005150255; Cost: 41169.0;
```

```
518 Iterations: 8425672
519 Temperature: 92.73466854377716; Cost: 41960.0;
    Iterations: 9478881
520 Temperature: 78.82446826221059; Cost: 40785.0;
    Iterations: 10532090
521 Temperature: 67.000798022879; Cost: 40905.0;
    Iterations: 11585299
522 Temperature: 56.95067831944714; Cost: 40201.0;
    Iterations: 12638508
523 Temperature: 48.40807657153007; Cost: 38276.0;
    Iterations: 13691717
524 Temperature: 41.146865085800556; Cost: 37922.0;
    Iterations: 14744926
525 Temperature: 34.974835322930474; Cost: 38308.0;
    Iterations: 15798135
526 Temperature: 29.7286100244909; Cost: 38002.0;
    Iterations: 16851344
527 Temperature: 25.269318520817265; Cost: 36154.0;
    Iterations: 17904553
528 Temperature: 21.478920742694676; Cost: 35317.0;
    Iterations: 18957762
529 Temperature: 18.257082631290473; Cost: 34500.0;
    Iterations: 20010971
530 Temperature: 15.5185202365969; Cost: 32513.0;
    Iterations: 21064180
531 Temperature: 13.190742201107366; Cost: 30483.0;
    Iterations: 22117389
532 Temperature: 11.21213087094126; Cost: 29330.0;
    Iterations: 23170598
533 Temperature: 9.53031124030007; Cost: 27006.0;
    Iterations: 24223807
534 Temperature: 8.10076455425506; Cost: 24792.0;
    Iterations: 25277016
535 Temperature: 6.8856498711168; Cost: 23228.0;
    Iterations: 26330225
536 Temperature: 5.85280239044928; Cost: 21298.0;
    Iterations: 27383434
537 Temperature: 4.974882031881887; Cost: 19770.0;
    Iterations: 28436643
538 Temperature: 4.228649727099604; Cost: 18361.0;
    Iterations: 29489852
539 Temperature: 3.5943522680346636; Cost: 17185.0;
    Iterations: 30543061
540 Temperature: 3.055199427829464; Cost: 16025.0;
```

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540 Iterations: 31596270
541 Temperature: 2.596919513655044; Cost: 15160.0;
    Iterations: 32649479
542 Temperature: 2.2073815866067874; Cost: 14402.0;
    Iterations: 33702688
543 Temperature: 1.8762743486157691; Cost: 13787.0;
    Iterations: 34755897
544 Temperature: 1.5948331963234037; Cost: 13080.0;
    Iterations: 35809106
545 Temperature: 1.355608216874893; Cost: 12633.0;
    Iterations: 36862315
546 Temperature: 1.152266984343659; Cost: 12141.0;
    Iterations: 37915524
547 Temperature: 0.9794269366921101; Cost: 11630.0;
    Iterations: 38968733
548 Temperature: 0.8325128961882936; Cost: 11363.0;
    Iterations: 40021942
549 Temperature: 0.7076359617600495; Cost: 11071.0;
    Iterations: 41075151
550 Temperature: 0.601490567496042; Cost: 10806.0;
    Iterations: 42128360
551 Temperature: 0.5112669823716357; Cost: 10620.0;
    Iterations: 43181569
552 Temperature: 0.43457693501589034; Cost: 10479.0;
    Iterations: 44234778
553 Temperature: 0.36939039476350677; Cost: 10370.0;
    Iterations: 45287987
554 Temperature: 0.31398183554898074; Cost: 10270.0;
    Iterations: 46341196
555 Temperature: 0.2668845602166336; Cost: 10206.0;
    Iterations: 47394405
556 Temperature: 0.22685187618413855; Cost: 10167.0;
    Iterations: 48447614
557 Final cost: 10167.0
558 Total iterations: 48447614
559 Took 3746.537137746811
560 Running: apex4.txt-0.85-20-25
561 1400
562 Initial temperature: 800.7589257341169
563 Temperature: 680.6450868739994; Cost: 43140.0;
    Iterations: 351070
564 Temperature: 578.5483238428994; Cost: 43703.0;
    Iterations: 702140
565 Temperature: 491.7660752664645; Cost: 43025.0;
```

```
565 Iterations: 1053210
566 Temperature: 418.0011639764948; Cost: 43434.0;
Iterations: 1404280
567 Temperature: 355.30098938002055; Cost: 43552.0;
Iterations: 1755350
568 Temperature: 302.0058409730175; Cost: 42923.0;
Iterations: 2106420
569 Temperature: 256.7049648270648; Cost: 43088.0;
Iterations: 2457490
570 Temperature: 218.1992201030051; Cost: 44115.0;
Iterations: 2808560
571 Temperature: 185.46933708755432; Cost: 42191.0;
Iterations: 3159630
572 Temperature: 157.64893652442117; Cost: 42364.0;
Iterations: 3510700
573 Temperature: 134.001596045758; Cost: 42055.0;
Iterations: 3861770
574 Temperature: 113.90135663889428; Cost: 40922.0;
Iterations: 4212840
575 Temperature: 96.81615314306013; Cost: 41508.0;
Iterations: 4563910
576 Temperature: 82.29373017160111; Cost: 40881.0;
Iterations: 4914980
577 Temperature: 69.94967064586095; Cost: 40919.0;
Iterations: 5266050
578 Temperature: 59.4572200489818; Cost: 40860.0;
Iterations: 5617120
579 Temperature: 50.53863704163453; Cost: 39245.0;
Iterations: 5968190
580 Temperature: 42.95784148538935; Cost: 39135.0;
Iterations: 6319260
581 Temperature: 36.514165262580946; Cost: 38045.0;
Iterations: 6670330
582 Temperature: 31.0370404731938; Cost: 37544.0;
Iterations: 7021400
583 Temperature: 26.38148440221473; Cost: 36205.0;
Iterations: 7372470
584 Temperature: 22.42426174188252; Cost: 35476.0;
Iterations: 7723540
585 Temperature: 19.06062248060014; Cost: 34883.0;
Iterations: 8074610
586 Temperature: 16.20152910851012; Cost: 32326.0;
Iterations: 8425680
587 Temperature: 13.7712997422336; Cost: 30953.0;
```

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587 Iterations: 8776750
588 Temperature: 11.70560478089856; Cost: 29153.0;
    Iterations: 9127820
589 Temperature: 9.949764063763775; Cost: 27712.0;
    Iterations: 9478890
590 Temperature: 8.457299454199209; Cost: 25707.0;
    Iterations: 9829960
591 Temperature: 7.188704536069327; Cost: 23855.0;
    Iterations: 10181030
592 Temperature: 6.110398855658928; Cost: 22097.0;
    Iterations: 10532100
593 Temperature: 5.193839027310088; Cost: 20712.0;
    Iterations: 10883170
594 Temperature: 4.414763173213575; Cost: 18629.0;
    Iterations: 11234240
595 Temperature: 3.7525486972315383; Cost: 17374.0;
    Iterations: 11585310
596 Temperature: 3.1896663926468074; Cost: 16434.0;
    Iterations: 11936380
597 Temperature: 2.711216433749786; Cost: 15547.0;
    Iterations: 12287450
598 Temperature: 2.304533968687318; Cost: 14497.0;
    Iterations: 12638520
599 Temperature: 1.9588538733842202; Cost: 13803.0;
    Iterations: 12989590
600 Temperature: 1.6650257923765872; Cost: 13190.0;
    Iterations: 13340660
601 Temperature: 1.415271923520099; Cost: 12557.0;
    Iterations: 13691730
602 Temperature: 1.202981134992084; Cost: 12104.0;
    Iterations: 14042800
603 Temperature: 1.0225339647432714; Cost: 11767.0;
    Iterations: 14393870
604 Temperature: 0.8691538700317807; Cost: 11454.0;
    Iterations: 14744940
605 Temperature: 0.7387807895270135; Cost: 11278.0;
    Iterations: 15096010
606 Temperature: 0.6279636710979615; Cost: 11016.0;
    Iterations: 15447080
607 Temperature: 0.5337691204332672; Cost: 10845.0;
    Iterations: 15798150
608 Temperature: 0.4537037523682771; Cost: 10684.0;
    Iterations: 16149220
609 Temperature: 0.38564818951303553; Cost: 10607.0;
```

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609 Iterations: 16500290
610 Temperature: 0.3278009610860802; Cost: 10496.0;
    Iterations: 16851360
611 Temperature: 0.27863081692316816; Cost: 10398.0;
    Iterations: 17202430
612 Temperature: 0.23683619438469292; Cost: 10324.0;
    Iterations: 17553500
613 Temperature: 0.20131076522698899; Cost: 10269.0;
    Iterations: 17904570
614 Temperature: 0.17111415044294062; Cost: 10218.0;
    Iterations: 18255640
615 Final cost: 10218.0
616 Total iterations: 18255640
617 Took 1399.7981581687927
618 Running: apex4.txt-0.85-20-50
619 1400
620 Initial temperature: 800.7589257341169
621 Temperature: 680.6450868739994; Cost: 43308.0;
    Iterations: 702139
622 Temperature: 578.5483238428994; Cost: 43781.0;
    Iterations: 1404278
623 Temperature: 491.7660752664645; Cost: 43134.0;
    Iterations: 2106417
624 Temperature: 418.0011639764948; Cost: 43751.0;
    Iterations: 2808556
625 Temperature: 355.30098938002055; Cost: 43584.0;
    Iterations: 3510695
626 Temperature: 302.0058409730175; Cost: 41781.0;
    Iterations: 4212834
627 Temperature: 256.7049648270648; Cost: 42006.0;
    Iterations: 4914973
628 Temperature: 218.1992201030051; Cost: 43107.0;
    Iterations: 5617112
629 Temperature: 185.46933708755432; Cost: 42270.0;
    Iterations: 6319251
630 Temperature: 157.64893652442117; Cost: 43324.0;
    Iterations: 7021390
631 Temperature: 134.001596045758; Cost: 42265.0;
    Iterations: 7723529
632 Temperature: 113.90135663889428; Cost: 41837.0;
    Iterations: 8425668
633 Temperature: 96.81615314306013; Cost: 41628.0;
    Iterations: 9127807
634 Temperature: 82.29373017160111; Cost: 41918.0;
```

```
634 Iterations: 9829946
635 Temperature: 69.94967064586095; Cost: 40990.0;
    Iterations: 10532085
636 Temperature: 59.4572200489818; Cost: 40811.0;
    Iterations: 11234224
637 Temperature: 50.53863704163453; Cost: 40266.0;
    Iterations: 11936363
638 Temperature: 42.95784148538935; Cost: 40505.0;
    Iterations: 12638502
639 Temperature: 36.514165262580946; Cost: 38510.0;
    Iterations: 13340641
640 Temperature: 31.0370404731938; Cost: 38037.0;
    Iterations: 14042780
641 Temperature: 26.38148440221473; Cost: 36454.0;
    Iterations: 14744919
642 Temperature: 22.42426174188252; Cost: 35251.0;
    Iterations: 15447058
643 Temperature: 19.06062248060014; Cost: 34851.0;
    Iterations: 16149197
644 Temperature: 16.20152910851012; Cost: 33438.0;
    Iterations: 16851336
645 Temperature: 13.7712997422336; Cost: 30986.0;
    Iterations: 17553475
646 Temperature: 11.70560478089856; Cost: 29733.0;
    Iterations: 18255614
647 Temperature: 9.949764063763775; Cost: 26723.0;
    Iterations: 18957753
648 Temperature: 8.457299454199209; Cost: 25218.0;
    Iterations: 19659892
649 Temperature: 7.188704536069327; Cost: 23424.0;
    Iterations: 20362031
650 Temperature: 6.110398855658928; Cost: 22356.0;
    Iterations: 21064170
651 Temperature: 5.193839027310088; Cost: 20469.0;
    Iterations: 21766309
652 Temperature: 4.414763173213575; Cost: 19155.0;
    Iterations: 22468448
653 Temperature: 3.7525486972315383; Cost: 17709.0;
    Iterations: 23170587
654 Temperature: 3.1896663926468074; Cost: 16026.0;
    Iterations: 23872726
655 Temperature: 2.711216433749786; Cost: 15552.0;
    Iterations: 24574865
656 Temperature: 2.304533968687318; Cost: 14506.0;
```

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656 Iterations: 25277004
657 Temperature: 1.9588538733842202; Cost: 13831.0;
    Iterations: 25979143
658 Temperature: 1.6650257923765872; Cost: 13295.0;
    Iterations: 26681282
659 Temperature: 1.415271923520099; Cost: 12654.0;
    Iterations: 27383421
660 Temperature: 1.202981134992084; Cost: 12001.0;
    Iterations: 28085560
661 Temperature: 1.0225339647432714; Cost: 11746.0;
    Iterations: 28787699
662 Temperature: 0.8691538700317807; Cost: 11463.0;
    Iterations: 29489838
663 Temperature: 0.7387807895270135; Cost: 11207.0;
    Iterations: 30191977
664 Temperature: 0.6279636710979615; Cost: 10951.0;
    Iterations: 30894116
665 Temperature: 0.5337691204332672; Cost: 10766.0;
    Iterations: 31596255
666 Temperature: 0.4537037523682771; Cost: 10574.0;
    Iterations: 32298394
667 Temperature: 0.38564818951303553; Cost: 10488.0;
    Iterations: 33000533
668 Temperature: 0.3278009610860802; Cost: 10390.0;
    Iterations: 33702672
669 Temperature: 0.27863081692316816; Cost: 10297.0;
    Iterations: 34404811
670 Temperature: 0.23683619438469292; Cost: 10225.0;
    Iterations: 35106950
671 Temperature: 0.20131076522698899; Cost: 10174.0;
    Iterations: 35809089
672 Temperature: 0.17111415044294062; Cost: 10150.0;
    Iterations: 36511228
673 Final cost: 10150.0
674 Total iterations: 36511228
675 Took 2792.4686317443848
676 Running: apex4.txt-0.85-20-75
677 1400
678 Initial temperature: 800.7589257341169
679 Temperature: 680.6450868739994; Cost: 43313.0;
    Iterations: 1053209
680 Temperature: 578.5483238428994; Cost: 43675.0;
    Iterations: 2106418
681 Temperature: 491.7660752664645; Cost: 43262.0;
```

```
681 Iterations: 3159627
682 Temperature: 418.0011639764948; Cost: 42868.0;
    Iterations: 4212836
683 Temperature: 355.30098938002055; Cost: 43551.0;
    Iterations: 5266045
684 Temperature: 302.0058409730175; Cost: 42889.0;
    Iterations: 6319254
685 Temperature: 256.7049648270648; Cost: 44198.0;
    Iterations: 7372463
686 Temperature: 218.1992201030051; Cost: 42382.0;
    Iterations: 8425672
687 Temperature: 185.46933708755432; Cost: 42263.0;
    Iterations: 9478881
688 Temperature: 157.64893652442117; Cost: 41814.0;
    Iterations: 10532090
689 Temperature: 134.001596045758; Cost: 42270.0;
    Iterations: 11585299
690 Temperature: 113.90135663889428; Cost: 42319.0;
    Iterations: 12638508
691 Temperature: 96.81615314306013; Cost: 41160.0;
    Iterations: 13691717
692 Temperature: 82.29373017160111; Cost: 40872.0;
    Iterations: 14744926
693 Temperature: 69.94967064586095; Cost: 40406.0;
    Iterations: 15798135
694 Temperature: 59.4572200489818; Cost: 40072.0;
    Iterations: 16851344
695 Temperature: 50.53863704163453; Cost: 39876.0;
    Iterations: 17904553
696 Temperature: 42.95784148538935; Cost: 39022.0;
    Iterations: 18957762
697 Temperature: 36.514165262580946; Cost: 38275.0;
    Iterations: 20010971
698 Temperature: 31.0370404731938; Cost: 38564.0;
    Iterations: 21064180
699 Temperature: 26.38148440221473; Cost: 36760.0;
    Iterations: 22117389
700 Temperature: 22.42426174188252; Cost: 36184.0;
    Iterations: 23170598
701 Temperature: 19.06062248060014; Cost: 34065.0;
    Iterations: 24223807
702 Temperature: 16.20152910851012; Cost: 33479.0;
    Iterations: 25277016
703 Temperature: 13.7712997422336; Cost: 30877.0;
```

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703 Iterations: 26330225
704 Temperature: 11.70560478089856; Cost: 29212.0;
    Iterations: 27383434
705 Temperature: 9.949764063763775; Cost: 27192.0;
    Iterations: 28436643
706 Temperature: 8.457299454199209; Cost: 25828.0;
    Iterations: 29489852
707 Temperature: 7.188704536069327; Cost: 23708.0;
    Iterations: 30543061
708 Temperature: 6.110398855658928; Cost: 21697.0;
    Iterations: 31596270
709 Temperature: 5.193839027310088; Cost: 20477.0;
    Iterations: 32649479
710 Temperature: 4.414763173213575; Cost: 18628.0;
    Iterations: 33702688
711 Temperature: 3.7525486972315383; Cost: 17428.0;
    Iterations: 34755897
712 Temperature: 3.1896663926468074; Cost: 16119.0;
    Iterations: 35809106
713 Temperature: 2.711216433749786; Cost: 15484.0;
    Iterations: 36862315
714 Temperature: 2.304533968687318; Cost: 14228.0;
    Iterations: 37915524
715 Temperature: 1.9588538733842202; Cost: 13650.0;
    Iterations: 38968733
716 Temperature: 1.6650257923765872; Cost: 13081.0;
    Iterations: 40021942
717 Temperature: 1.415271923520099; Cost: 12583.0;
    Iterations: 41075151
718 Temperature: 1.202981134992084; Cost: 12035.0;
    Iterations: 42128360
719 Temperature: 1.0225339647432714; Cost: 11597.0;
    Iterations: 43181569
720 Temperature: 0.8691538700317807; Cost: 11325.0;
    Iterations: 44234778
721 Temperature: 0.7387807895270135; Cost: 11025.0;
    Iterations: 45287987
722 Temperature: 0.6279636710979615; Cost: 10737.0;
    Iterations: 46341196
723 Temperature: 0.5337691204332672; Cost: 10589.0;
    Iterations: 47394405
724 Temperature: 0.4537037523682771; Cost: 10401.0;
    Iterations: 48447614
725 Temperature: 0.38564818951303553; Cost: 10314.0;
```

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725 Iterations: 49500823
726 Temperature: 0.3278009610860802; Cost: 10201.0;
    Iterations: 50554032
727 Temperature: 0.27863081692316816; Cost: 10133.0;
    Iterations: 51607241
728 Temperature: 0.23683619438469292; Cost: 10069.0;
    Iterations: 52660450
729 Temperature: 0.20131076522698899; Cost: 10024.0;
    Iterations: 53713659
730 Final cost: 10024.0
731 Total iterations: 53713659
732 Took 4102.868423461914
733 Running: apex4.txt-0.85-30-25
734 1400
735 Initial temperature: 1201.1383886011754
736 Temperature: 1020.9676303109991; Cost: 43371.0;
    Iterations: 351070
737 Temperature: 867.8224857643492; Cost: 43673.0;
    Iterations: 702140
738 Temperature: 737.6491128996968; Cost: 43499.0;
    Iterations: 1053210
739 Temperature: 627.0017459647422; Cost: 43379.0;
    Iterations: 1404280
740 Temperature: 532.9514840700309; Cost: 43253.0;
    Iterations: 1755350
741 Temperature: 453.0087614595263; Cost: 43215.0;
    Iterations: 2106420
742 Temperature: 385.05744724059736; Cost: 43798.0;
    Iterations: 2457490
743 Temperature: 327.29883015450775; Cost: 43712.0;
    Iterations: 2808560
744 Temperature: 278.2040056313316; Cost: 43257.0;
    Iterations: 3159630
745 Temperature: 236.47340478663185; Cost: 42551.0;
    Iterations: 3510700
746 Temperature: 201.00239406863707; Cost: 42165.0;
    Iterations: 3861770
747 Temperature: 170.8520349583415; Cost: 41181.0;
    Iterations: 4212840
748 Temperature: 145.22422971459028; Cost: 42185.0;
    Iterations: 4563910
749 Temperature: 123.44059525740174; Cost: 41270.0;
    Iterations: 4914980
750 Temperature: 104.92450596879148; Cost: 41734.0;
```

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750 Iterations: 5266050
751 Temperature: 89.18583007347276; Cost: 41507.0;
    Iterations: 5617120
752 Temperature: 75.80795556245184; Cost: 40851.0;
    Iterations: 5968190
753 Temperature: 64.43676222808406; Cost: 40877.0;
    Iterations: 6319260
754 Temperature: 54.771247893871454; Cost: 39590.0;
    Iterations: 6670330
755 Temperature: 46.55556070979073; Cost: 39652.0;
    Iterations: 7021400
756 Temperature: 39.57222660332212; Cost: 39488.0;
    Iterations: 7372470
757 Temperature: 33.636392612823805; Cost: 38212.0;
    Iterations: 7723540
758 Temperature: 28.59093372090023; Cost: 37331.0;
    Iterations: 8074610
759 Temperature: 24.302293662765198; Cost: 35435.0;
    Iterations: 8425680
760 Temperature: 20.656949613350417; Cost: 35908.0;
    Iterations: 8776750
761 Temperature: 17.558407171347852; Cost: 34371.0;
    Iterations: 9127820
762 Temperature: 14.924646095645674; Cost: 32016.0;
    Iterations: 9478890
763 Temperature: 12.685949181298822; Cost: 30137.0;
    Iterations: 9829960
764 Temperature: 10.783056804103998; Cost: 28079.0;
    Iterations: 10181030
765 Temperature: 9.165598283488398; Cost: 26167.0;
    Iterations: 10532100
766 Temperature: 7.790758540965138; Cost: 23923.0;
    Iterations: 10883170
767 Temperature: 6.622144759820367; Cost: 22654.0;
    Iterations: 11234240
768 Temperature: 5.628823045847312; Cost: 20659.0;
    Iterations: 11585310
769 Temperature: 4.784499588970215; Cost: 20131.0;
    Iterations: 11936380
770 Temperature: 4.066824650624683; Cost: 18044.0;
    Iterations: 12287450
771 Temperature: 3.4568009530309802; Cost: 17125.0;
    Iterations: 12638520
772 Temperature: 2.938280810076333; Cost: 15720.0;
```

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772 Iterations: 12989590
773 Temperature: 2.497538688564883; Cost: 14872.0;
    Iterations: 13340660
774 Temperature: 2.1229078852801506; Cost: 14344.0;
    Iterations: 13691730
775 Temperature: 1.804471702488128; Cost: 13501.0;
    Iterations: 14042800
776 Temperature: 1.5338009471149088; Cost: 13062.0;
    Iterations: 14393870
777 Temperature: 1.3037308050476724; Cost: 12492.0;
    Iterations: 14744940
778 Temperature: 1.1081711842905215; Cost: 12116.0;
    Iterations: 15096010
779 Temperature: 0.9419455066469433; Cost: 11753.0;
    Iterations: 15447080
780 Temperature: 0.8006536806499018; Cost: 11442.0;
    Iterations: 15798150
781 Temperature: 0.6805556285524166; Cost: 11197.0;
    Iterations: 16149220
782 Temperature: 0.5784722842695541; Cost: 10992.0;
    Iterations: 16500290
783 Temperature: 0.491701441629121; Cost: 10859.0;
    Iterations: 16851360
784 Temperature: 0.41794622538475285; Cost: 10711.0;
    Iterations: 17202430
785 Temperature: 0.3552542915770399; Cost: 10589.0;
    Iterations: 17553500
786 Temperature: 0.3019661478404839; Cost: 10494.0;
    Iterations: 17904570
787 Temperature: 0.2566712256644113; Cost: 10436.0;
    Iterations: 18255640
788 Temperature: 0.2181705418147496; Cost: 10369.0;
    Iterations: 18606710
789 Temperature: 0.18544496054253715; Cost: 10326.0;
    Iterations: 18957780
790 Final cost: 10326.0
791 Total iterations: 18957780
792 Took 1421.739785194397
793 Running: apex4.txt-0.85-30-50
794 1400
795 Initial temperature: 1201.1383886011754
796 Temperature: 1020.9676303109991; Cost: 43309.0;
    Iterations: 702139
797 Temperature: 867.8224857643492; Cost: 43624.0;
```

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797 Iterations: 1404278
798 Temperature: 737.6491128996968; Cost: 43478.0;
    Iterations: 2106417
799 Temperature: 627.0017459647422; Cost: 43743.0;
    Iterations: 2808556
800 Temperature: 532.9514840700309; Cost: 43387.0;
    Iterations: 3510695
801 Temperature: 453.0087614595263; Cost: 42360.0;
    Iterations: 4212834
802 Temperature: 385.05744724059736; Cost: 42510.0;
    Iterations: 4914973
803 Temperature: 327.29883015450775; Cost: 42952.0;
    Iterations: 5617112
804 Temperature: 278.2040056313316; Cost: 43081.0;
    Iterations: 6319251
805 Temperature: 236.47340478663185; Cost: 43209.0;
    Iterations: 7021390
806 Temperature: 201.00239406863707; Cost: 42691.0;
    Iterations: 7723529
807 Temperature: 170.8520349583415; Cost: 42354.0;
    Iterations: 8425668
808 Temperature: 145.22422971459028; Cost: 42524.0;
    Iterations: 9127807
809 Temperature: 123.44059525740174; Cost: 41802.0;
    Iterations: 9829946
810 Temperature: 104.92450596879148; Cost: 41448.0;
    Iterations: 10532085
811 Temperature: 89.18583007347276; Cost: 41546.0;
    Iterations: 11234224
812 Temperature: 75.80795556245184; Cost: 40989.0;
    Iterations: 11936363
813 Temperature: 64.43676222808406; Cost: 41224.0;
    Iterations: 12638502
814 Temperature: 54.771247893871454; Cost: 39970.0;
    Iterations: 13340641
815 Temperature: 46.55556070979073; Cost: 39985.0;
    Iterations: 14042780
816 Temperature: 39.57222660332212; Cost: 38296.0;
    Iterations: 14744919
817 Temperature: 33.636392612823805; Cost: 37710.0;
    Iterations: 15447058
818 Temperature: 28.59093372090023; Cost: 37967.0;
    Iterations: 16149197
819 Temperature: 24.302293662765198; Cost: 36815.0;
```

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819 Iterations: 16851336
820 Temperature: 20.656949613350417; Cost: 34918.0;
    Iterations: 17553475
821 Temperature: 17.558407171347852; Cost: 34241.0;
    Iterations: 18255614
822 Temperature: 14.924646095645674; Cost: 31475.0;
    Iterations: 18957753
823 Temperature: 12.685949181298822; Cost: 29992.0;
    Iterations: 19659892
824 Temperature: 10.783056804103998; Cost: 29271.0;
    Iterations: 20362031
825 Temperature: 9.165598283488398; Cost: 26177.0;
    Iterations: 21064170
826 Temperature: 7.790758540965138; Cost: 24588.0;
    Iterations: 21766309
827 Temperature: 6.622144759820367; Cost: 22870.0;
    Iterations: 22468448
828 Temperature: 5.628823045847312; Cost: 21079.0;
    Iterations: 23170587
829 Temperature: 4.784499588970215; Cost: 19670.0;
    Iterations: 23872726
830 Temperature: 4.066824650624683; Cost: 18165.0;
    Iterations: 24574865
831 Temperature: 3.4568009530309802; Cost: 17108.0;
    Iterations: 25277004
832 Temperature: 2.938280810076333; Cost: 16202.0;
    Iterations: 25979143
833 Temperature: 2.497538688564883; Cost: 15097.0;
    Iterations: 26681282
834 Temperature: 2.1229078852801506; Cost: 14104.0;
    Iterations: 27383421
835 Temperature: 1.804471702488128; Cost: 13537.0;
    Iterations: 28085560
836 Temperature: 1.5338009471149088; Cost: 13097.0;
    Iterations: 28787699
837 Temperature: 1.3037308050476724; Cost: 12585.0;
    Iterations: 29489838
838 Temperature: 1.1081711842905215; Cost: 12034.0;
    Iterations: 30191977
839 Temperature: 0.9419455066469433; Cost: 11617.0;
    Iterations: 30894116
840 Temperature: 0.8006536806499018; Cost: 11357.0;
    Iterations: 31596255
841 Temperature: 0.6805556285524166; Cost: 11115.0;
```

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841 Iterations: 32298394
842 Temperature: 0.5784722842695541; Cost: 10853.0;
    Iterations: 33000533
843 Temperature: 0.491701441629121; Cost: 10759.0;
    Iterations: 33702672
844 Temperature: 0.41794622538475285; Cost: 10573.0;
    Iterations: 34404811
845 Temperature: 0.3552542915770399; Cost: 10472.0;
    Iterations: 35106950
846 Temperature: 0.3019661478404839; Cost: 10397.0;
    Iterations: 35809089
847 Temperature: 0.2566712256644113; Cost: 10320.0;
    Iterations: 36511228
848 Temperature: 0.2181705418147496; Cost: 10280.0;
    Iterations: 37213367
849 Final cost: 10280.0
850 Total iterations: 37213367
851 Took 2928.171484231949
852 Running: apex4.txt-0.85-30-75
853 1400
854 Initial temperature: 1201.1383886011754
855 Temperature: 1020.9676303109991; Cost: 43464.0;
    Iterations: 1053209
856 Temperature: 867.8224857643492; Cost: 43906.0;
    Iterations: 2106418
857 Temperature: 737.6491128996968; Cost: 43474.0;
    Iterations: 3159627
858 Temperature: 627.0017459647422; Cost: 42217.0;
    Iterations: 4212836
859 Temperature: 532.9514840700309; Cost: 43661.0;
    Iterations: 5266045
860 Temperature: 453.0087614595263; Cost: 42838.0;
    Iterations: 6319254
861 Temperature: 385.05744724059736; Cost: 44292.0;
    Iterations: 7372463
862 Temperature: 327.29883015450775; Cost: 42647.0;
    Iterations: 8425672
863 Temperature: 278.2040056313316; Cost: 42551.0;
    Iterations: 9478881
864 Temperature: 236.47340478663185; Cost: 42761.0;
    Iterations: 10532090
865 Temperature: 201.00239406863707; Cost: 42303.0;
    Iterations: 11585299
866 Temperature: 170.8520349583415; Cost: 42404.0;
```

```
866 Iterations: 12638508
867 Temperature: 145.22422971459028; Cost: 42006.0;
    Iterations: 13691717
868 Temperature: 123.44059525740174; Cost: 41417.0;
    Iterations: 14744926
869 Temperature: 104.92450596879148; Cost: 41415.0;
    Iterations: 15798135
870 Temperature: 89.18583007347276; Cost: 41219.0;
    Iterations: 16851344
871 Temperature: 75.80795556245184; Cost: 41818.0;
    Iterations: 17904553
872 Temperature: 64.43676222808406; Cost: 40368.0;
    Iterations: 18957762
873 Temperature: 54.771247893871454; Cost: 40201.0;
    Iterations: 20010971
874 Temperature: 46.55556070979073; Cost: 39167.0;
    Iterations: 21064180
875 Temperature: 39.57222660332212; Cost: 39302.0;
    Iterations: 22117389
876 Temperature: 33.636392612823805; Cost: 38549.0;
    Iterations: 23170598
877 Temperature: 28.59093372090023; Cost: 37145.0;
    Iterations: 24223807
878 Temperature: 24.302293662765198; Cost: 36858.0;
    Iterations: 25277016
879 Temperature: 20.656949613350417; Cost: 36263.0;
    Iterations: 26330225
880 Temperature: 17.558407171347852; Cost: 33988.0;
    Iterations: 27383434
881 Temperature: 14.924646095645674; Cost: 32952.0;
    Iterations: 28436643
882 Temperature: 12.685949181298822; Cost: 30131.0;
    Iterations: 29489852
883 Temperature: 10.783056804103998; Cost: 28259.0;
    Iterations: 30543061
884 Temperature: 9.165598283488398; Cost: 26525.0;
    Iterations: 31596270
885 Temperature: 7.790758540965138; Cost: 24635.0;
    Iterations: 32649479
886 Temperature: 6.622144759820367; Cost: 23072.0;
    Iterations: 33702688
887 Temperature: 5.628823045847312; Cost: 21267.0;
    Iterations: 34755897
888 Temperature: 4.784499588970215; Cost: 19612.0;
```

```
888 Iterations: 35809106
889 Temperature: 4.066824650624683; Cost: 17948.0;
    Iterations: 36862315
890 Temperature: 3.4568009530309802; Cost: 17092.0;
    Iterations: 37915524
891 Temperature: 2.938280810076333; Cost: 15790.0;
    Iterations: 38968733
892 Temperature: 2.497538688564883; Cost: 14858.0;
    Iterations: 40021942
893 Temperature: 2.1229078852801506; Cost: 14051.0;
    Iterations: 41075151
894 Temperature: 1.804471702488128; Cost: 13446.0;
    Iterations: 42128360
895 Temperature: 1.5338009471149088; Cost: 12882.0;
    Iterations: 43181569
896 Temperature: 1.3037308050476724; Cost: 12288.0;
    Iterations: 44234778
897 Temperature: 1.1081711842905215; Cost: 11850.0;
    Iterations: 45287987
898 Temperature: 0.9419455066469433; Cost: 11450.0;
    Iterations: 46341196
899 Temperature: 0.8006536806499018; Cost: 11196.0;
    Iterations: 47394405
900 Temperature: 0.6805556285524166; Cost: 10978.0;
    Iterations: 48447614
901 Temperature: 0.5784722842695541; Cost: 10752.0;
    Iterations: 49500823
902 Temperature: 0.491701441629121; Cost: 10540.0;
    Iterations: 50554032
903 Temperature: 0.41794622538475285; Cost: 10361.0;
    Iterations: 51607241
904 Temperature: 0.3552542915770399; Cost: 10251.0;
    Iterations: 52660450
905 Temperature: 0.3019661478404839; Cost: 10163.0;
    Iterations: 53713659
906 Temperature: 0.2566712256644113; Cost: 10090.0;
    Iterations: 54766868
907 Temperature: 0.2181705418147496; Cost: 10050.0;
    Iterations: 55820077
908 Final cost: 10050.0
909 Total iterations: 55820077
910 Took 4276.989060640335
911 Running: apex4.txt-0.9-10-25
912 1400
```

```
913 Initial temperature: 400.37946286705846
914 Temperature: 360.3415165803526; Cost: 42718.0;
Iterations: 351070
915 Temperature: 324.3073649223174; Cost: 42495.0;
Iterations: 702140
916 Temperature: 291.87662843008565; Cost: 42878.0;
Iterations: 1053210
917 Temperature: 262.68896558707706; Cost: 43037.0;
Iterations: 1404280
918 Temperature: 236.42006902836937; Cost: 42965.0;
Iterations: 1755350
919 Temperature: 212.77806212553244; Cost: 42443.0;
Iterations: 2106420
920 Temperature: 191.5002559129792; Cost: 42677.0;
Iterations: 2457490
921 Temperature: 172.3502303216813; Cost: 42878.0;
Iterations: 2808560
922 Temperature: 155.11520728951317; Cost: 42612.0;
Iterations: 3159630
923 Temperature: 139.60368656056184; Cost: 42759.0;
Iterations: 3510700
924 Temperature: 125.64331790450566; Cost: 40885.0;
Iterations: 3861770
925 Temperature: 113.0789861140551; Cost: 41031.0;
Iterations: 4212840
926 Temperature: 101.77108750264959; Cost: 42226.0;
Iterations: 4563910
927 Temperature: 91.59397875238463; Cost: 40799.0;
Iterations: 4914980
928 Temperature: 82.43458087714617; Cost: 41408.0;
Iterations: 5266050
929 Temperature: 74.19112278943156; Cost: 40722.0;
Iterations: 5617120
930 Temperature: 66.7720105104884; Cost: 39816.0;
Iterations: 5968190
931 Temperature: 60.09480945943956; Cost: 40937.0;
Iterations: 6319260
932 Temperature: 54.085328513495604; Cost: 39964.0;
Iterations: 6670330
933 Temperature: 48.67679566214604; Cost: 40042.0;
Iterations: 7021400
934 Temperature: 43.80911609593144; Cost: 39278.0;
Iterations: 7372470
935 Temperature: 39.428204486338295; Cost: 39567.0;
```

```
935 Iterations: 7723540
936 Temperature: 35.48538403770446; Cost: 37626.0;
    Iterations: 8074610
937 Temperature: 31.936845633934016; Cost: 37778.0;
    Iterations: 8425680
938 Temperature: 28.743161070540616; Cost: 36399.0;
    Iterations: 8776750
939 Temperature: 25.868844963486556; Cost: 36305.0;
    Iterations: 9127820
940 Temperature: 23.2819604671379; Cost: 36142.0;
    Iterations: 9478890
941 Temperature: 20.95376442042411; Cost: 35090.0;
    Iterations: 9829960
942 Temperature: 18.8583879783817; Cost: 34063.0;
    Iterations: 10181030
943 Temperature: 16.97254918054353; Cost: 32843.0;
    Iterations: 10532100
944 Temperature: 15.275294262489178; Cost: 31996.0;
    Iterations: 10883170
945 Temperature: 13.74776483624026; Cost: 30571.0;
    Iterations: 11234240
946 Temperature: 12.372988352616234; Cost: 29095.0;
    Iterations: 11585310
947 Temperature: 11.135689517354612; Cost: 28084.0;
    Iterations: 11936380
948 Temperature: 10.02212056561915; Cost: 26548.0;
    Iterations: 12287450
949 Temperature: 9.019908509057236; Cost: 25057.0;
    Iterations: 12638520
950 Temperature: 8.117917658151512; Cost: 24209.0;
    Iterations: 12989590
951 Temperature: 7.306125892336361; Cost: 23182.0;
    Iterations: 13340660
952 Temperature: 6.575513303102725; Cost: 22246.0;
    Iterations: 13691730
953 Temperature: 5.917961972792453; Cost: 21348.0;
    Iterations: 14042800
954 Temperature: 5.326165775513208; Cost: 19740.0;
    Iterations: 14393870
955 Temperature: 4.793549197961887; Cost: 18826.0;
    Iterations: 14744940
956 Temperature: 4.314194278165699; Cost: 18393.0;
    Iterations: 15096010
957 Temperature: 3.8827748503491293; Cost: 17367.0;
```

```
957 Iterations: 15447080
958 Temperature: 3.4944973653142166; Cost: 16695.0;
    Iterations: 15798150
959 Temperature: 3.145047628782795; Cost: 15887.0;
    Iterations: 16149220
960 Temperature: 2.8305428659045155; Cost: 15273.0;
    Iterations: 16500290
961 Temperature: 2.5474885793140642; Cost: 15151.0;
    Iterations: 16851360
962 Temperature: 2.2927397213826577; Cost: 14256.0;
    Iterations: 17202430
963 Temperature: 2.063465749244392; Cost: 13904.0;
    Iterations: 17553500
964 Temperature: 1.857119174319953; Cost: 13397.0;
    Iterations: 17904570
965 Temperature: 1.6714072568879579; Cost: 12847.0;
    Iterations: 18255640
966 Temperature: 1.504266531199162; Cost: 12474.0;
    Iterations: 18606710
967 Temperature: 1.353839878079246; Cost: 12269.0;
    Iterations: 18957780
968 Temperature: 1.2184558902713214; Cost: 12059.0;
    Iterations: 19308850
969 Temperature: 1.0966103012441892; Cost: 11754.0;
    Iterations: 19659920
970 Temperature: 0.9869492711197704; Cost: 11577.0;
    Iterations: 20010990
971 Temperature: 0.8882543440077934; Cost: 11402.0;
    Iterations: 20362060
972 Temperature: 0.7994289096070141; Cost: 11245.0;
    Iterations: 20713130
973 Temperature: 0.7194860186463127; Cost: 11033.0;
    Iterations: 21064200
974 Temperature: 0.6475374167816814; Cost: 10960.0;
    Iterations: 21415270
975 Temperature: 0.5827836751035133; Cost: 10800.0;
    Iterations: 21766340
976 Temperature: 0.5245053075931619; Cost: 10674.0;
    Iterations: 22117410
977 Temperature: 0.4720547768338458; Cost: 10592.0;
    Iterations: 22468480
978 Temperature: 0.4248492991504612; Cost: 10481.0;
    Iterations: 22819550
979 Temperature: 0.3823643692354151; Cost: 10429.0;
```

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979 Iterations: 23170620
980 Final cost: 10429.0
981 Total iterations: 23170620
982 Took 1784.000365972519
983 Running: apex4.txt-0.9-10-50
984 1400
985 Initial temperature: 400.37946286705846
986 Temperature: 360.3415165803526; Cost: 43290.0;
Iterations: 702139
987 Temperature: 324.3073649223174; Cost: 43269.0;
Iterations: 1404278
988 Temperature: 291.87662843008565; Cost: 43270.0;
Iterations: 2106417
989 Temperature: 262.68896558707706; Cost: 43649.0;
Iterations: 2808556
990 Temperature: 236.42006902836937; Cost: 43077.0;
Iterations: 3510695
991 Temperature: 212.77806212553244; Cost: 41755.0;
Iterations: 4212834
992 Temperature: 191.5002559129792; Cost: 42109.0;
Iterations: 4914973
993 Temperature: 172.3502303216813; Cost: 42713.0;
Iterations: 5617112
994 Temperature: 155.11520728951317; Cost: 42116.0;
Iterations: 6319251
995 Temperature: 139.60368656056184; Cost: 42621.0;
Iterations: 7021390
996 Temperature: 125.64331790450566; Cost: 41878.0;
Iterations: 7723529
997 Temperature: 113.0789861140551; Cost: 41883.0;
Iterations: 8425668
998 Temperature: 101.77108750264959; Cost: 42216.0;
Iterations: 9127807
999 Temperature: 91.59397875238463; Cost: 40854.0;
Iterations: 9829946
1000 Temperature: 82.43458087714617; Cost: 40557.0;
Iterations: 10532085
1001 Temperature: 74.19112278943156; Cost: 41023.0;
Iterations: 11234224
1002 Temperature: 66.7720105104884; Cost: 40851.0;
Iterations: 11936363
1003 Temperature: 60.09480945943956; Cost: 41459.0;
Iterations: 12638502
1004 Temperature: 54.085328513495604; Cost: 40427.0;
```

1004	Iterations:	13340641
1005	Temperature:	48.67679566214604; Cost: 40721.0;
	Iterations:	14042780
1006	Temperature:	43.80911609593144; Cost: 38749.0;
	Iterations:	14744919
1007	Temperature:	39.428204486338295; Cost: 38085.0;
	Iterations:	15447058
1008	Temperature:	35.48538403770446; Cost: 38306.0;
	Iterations:	16149197
1009	Temperature:	31.936845633934016; Cost: 37528.0;
	Iterations:	16851336
1010	Temperature:	28.743161070540616; Cost: 37182.0;
	Iterations:	17553475
1011	Temperature:	25.868844963486556; Cost: 36521.0;
	Iterations:	18255614
1012	Temperature:	23.2819604671379; Cost: 35576.0;
	Iterations:	18957753
1013	Temperature:	20.95376442042411; Cost: 35500.0;
	Iterations:	19659892
1014	Temperature:	18.8583879783817; Cost: 34853.0;
	Iterations:	20362031
1015	Temperature:	16.97254918054353; Cost: 33360.0;
	Iterations:	21064170
1016	Temperature:	15.275294262489178; Cost: 32324.0;
	Iterations:	21766309
1017	Temperature:	13.74776483624026; Cost: 30397.0;
	Iterations:	22468448
1018	Temperature:	12.372988352616234; Cost: 29161.0;
	Iterations:	23170587
1019	Temperature:	11.135689517354612; Cost: 28314.0;
	Iterations:	23872726
1020	Temperature:	10.02212056561915; Cost: 26909.0;
	Iterations:	24574865
1021	Temperature:	9.019908509057236; Cost: 25721.0;
	Iterations:	25277004
1022	Temperature:	8.117917658151512; Cost: 24659.0;
	Iterations:	25979143
1023	Temperature:	7.306125892336361; Cost: 23652.0;
	Iterations:	26681282
1024	Temperature:	6.575513303102725; Cost: 21896.0;
	Iterations:	27383421
1025	Temperature:	5.917961972792453; Cost: 20771.0;
	Iterations:	28085560
1026	Temperature:	5.326165775513208; Cost: 20105.0;

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1026 Iterations: 28787699
1027 Temperature: 4.793549197961887; Cost: 19503.0;
    Iterations: 29489838
1028 Temperature: 4.314194278165699; Cost: 18175.0;
    Iterations: 30191977
1029 Temperature: 3.8827748503491293; Cost: 17324.0;
    Iterations: 30894116
1030 Temperature: 3.4944973653142166; Cost: 16474.0;
    Iterations: 31596255
1031 Temperature: 3.145047628782795; Cost: 15994.0;
    Iterations: 32298394
1032 Temperature: 2.8305428659045155; Cost: 15284.0;
    Iterations: 33000533
1033 Temperature: 2.5474885793140642; Cost: 14532.0;
    Iterations: 33702672
1034 Temperature: 2.2927397213826577; Cost: 14208.0;
    Iterations: 34404811
1035 Temperature: 2.063465749244392; Cost: 13625.0;
    Iterations: 35106950
1036 Temperature: 1.857119174319953; Cost: 13306.0;
    Iterations: 35809089
1037 Temperature: 1.6714072568879579; Cost: 12978.0;
    Iterations: 36511228
1038 Temperature: 1.504266531199162; Cost: 12553.0;
    Iterations: 37213367
1039 Temperature: 1.353839878079246; Cost: 12269.0;
    Iterations: 37915506
1040 Temperature: 1.2184558902713214; Cost: 12039.0;
    Iterations: 38617645
1041 Temperature: 1.0966103012441892; Cost: 11834.0;
    Iterations: 39319784
1042 Temperature: 0.9869492711197704; Cost: 11601.0;
    Iterations: 40021923
1043 Temperature: 0.8882543440077934; Cost: 11293.0;
    Iterations: 40724062
1044 Temperature: 0.7994289096070141; Cost: 11115.0;
    Iterations: 41426201
1045 Temperature: 0.7194860186463127; Cost: 11018.0;
    Iterations: 42128340
1046 Temperature: 0.6475374167816814; Cost: 10790.0;
    Iterations: 42830479
1047 Temperature: 0.5827836751035133; Cost: 10624.0;
    Iterations: 43532618
1048 Temperature: 0.5245053075931619; Cost: 10535.0;
```

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1048 Iterations: 44234757
1049 Temperature: 0.4720547768338458; Cost: 10424.0;
    Iterations: 44936896
1050 Temperature: 0.4248492991504612; Cost: 10377.0;
    Iterations: 45639035
1051 Final cost: 10377.0
1052 Total iterations: 45639035
1053 Took 3529.755804538727
1054 Running: apex4.txt-0.9-10-75
1055 1400
1056 Initial temperature: 400.37946286705846
1057 Temperature: 360.3415165803526; Cost: 43234.0;
    Iterations: 1053209
1058 Temperature: 324.3073649223174; Cost: 42990.0;
    Iterations: 2106418
1059 Temperature: 291.87662843008565; Cost: 43192.0;
    Iterations: 3159627
1060 Temperature: 262.68896558707706; Cost: 42022.0;
    Iterations: 4212836
1061 Temperature: 236.42006902836937; Cost: 43189.0;
    Iterations: 5266045
1062 Temperature: 212.77806212553244; Cost: 42486.0;
    Iterations: 6319254
1063 Temperature: 191.5002559129792; Cost: 43538.0;
    Iterations: 7372463
1064 Temperature: 172.3502303216813; Cost: 42110.0;
    Iterations: 8425672
1065 Temperature: 155.11520728951317; Cost: 42071.0;
    Iterations: 9478881
1066 Temperature: 139.60368656056184; Cost: 41455.0;
    Iterations: 10532090
1067 Temperature: 125.64331790450566; Cost: 41857.0;
    Iterations: 11585299
1068 Temperature: 113.0789861140551; Cost: 42229.0;
    Iterations: 12638508
1069 Temperature: 101.77108750264959; Cost: 41605.0;
    Iterations: 13691717
1070 Temperature: 91.59397875238463; Cost: 41411.0;
    Iterations: 14744926
1071 Temperature: 82.43458087714617; Cost: 40994.0;
    Iterations: 15798135
1072 Temperature: 74.19112278943156; Cost: 41424.0;
    Iterations: 16851344
1073 Temperature: 66.7720105104884; Cost: 41090.0;
```

```
1073 Iterations: 17904553
1074 Temperature: 60.09480945943956; Cost: 39703.0;
    Iterations: 18957762
1075 Temperature: 54.085328513495604; Cost: 39869.0;
    Iterations: 20010971
1076 Temperature: 48.67679566214604; Cost: 39536.0;
    Iterations: 21064180
1077 Temperature: 43.80911609593144; Cost: 39116.0;
    Iterations: 22117389
1078 Temperature: 39.428204486338295; Cost: 38483.0;
    Iterations: 23170598
1079 Temperature: 35.48538403770446; Cost: 38709.0;
    Iterations: 24223807
1080 Temperature: 31.936845633934016; Cost: 37951.0;
    Iterations: 25277016
1081 Temperature: 28.743161070540616; Cost: 37226.0;
    Iterations: 26330225
1082 Temperature: 25.868844963486556; Cost: 37039.0;
    Iterations: 27383434
1083 Temperature: 23.2819604671379; Cost: 35935.0;
    Iterations: 28436643
1084 Temperature: 20.95376442042411; Cost: 34765.0;
    Iterations: 29489852
1085 Temperature: 18.8583879783817; Cost: 34960.0;
    Iterations: 30543061
1086 Temperature: 16.97254918054353; Cost: 33074.0;
    Iterations: 31596270
1087 Temperature: 15.275294262489178; Cost: 32763.0;
    Iterations: 32649479
1088 Temperature: 13.74776483624026; Cost: 30859.0;
    Iterations: 33702688
1089 Temperature: 12.372988352616234; Cost: 29315.0;
    Iterations: 34755897
1090 Temperature: 11.135689517354612; Cost: 27827.0;
    Iterations: 35809106
1091 Temperature: 10.02212056561915; Cost: 26297.0;
    Iterations: 36862315
1092 Temperature: 9.019908509057236; Cost: 25909.0;
    Iterations: 37915524
1093 Temperature: 8.117917658151512; Cost: 24307.0;
    Iterations: 38968733
1094 Temperature: 7.306125892336361; Cost: 23166.0;
    Iterations: 40021942
1095 Temperature: 6.575513303102725; Cost: 22297.0;
```

```
1095 Iterations: 41075151
1096 Temperature: 5.917961972792453; Cost: 21204.0;
    Iterations: 42128360
1097 Temperature: 5.326165775513208; Cost: 20147.0;
    Iterations: 43181569
1098 Temperature: 4.793549197961887; Cost: 19186.0;
    Iterations: 44234778
1099 Temperature: 4.314194278165699; Cost: 18522.0;
    Iterations: 45287987
1100 Temperature: 3.8827748503491293; Cost: 17237.0;
    Iterations: 46341196
1101 Temperature: 3.4944973653142166; Cost: 16525.0;
    Iterations: 47394405
1102 Temperature: 3.145047628782795; Cost: 15894.0;
    Iterations: 48447614
1103 Temperature: 2.8305428659045155; Cost: 15201.0;
    Iterations: 49500823
1104 Temperature: 2.5474885793140642; Cost: 14566.0;
    Iterations: 50554032
1105 Temperature: 2.2927397213826577; Cost: 14212.0;
    Iterations: 51607241
1106 Temperature: 2.063465749244392; Cost: 13738.0;
    Iterations: 52660450
1107 Temperature: 1.857119174319953; Cost: 13310.0;
    Iterations: 53713659
1108 Temperature: 1.6714072568879579; Cost: 13010.0;
    Iterations: 54766868
1109 Temperature: 1.504266531199162; Cost: 12588.0;
    Iterations: 55820077
1110 Temperature: 1.353839878079246; Cost: 12109.0;
    Iterations: 56873286
1111 Temperature: 1.2184558902713214; Cost: 12005.0;
    Iterations: 57926495
1112 Temperature: 1.0966103012441892; Cost: 11671.0;
    Iterations: 58979704
1113 Temperature: 0.9869492711197704; Cost: 11401.0;
    Iterations: 60032913
1114 Temperature: 0.8882543440077934; Cost: 11204.0;
    Iterations: 61086122
1115 Temperature: 0.7994289096070141; Cost: 11054.0;
    Iterations: 62139331
1116 Temperature: 0.7194860186463127; Cost: 10767.0;
    Iterations: 63192540
1117 Temperature: 0.6475374167816814; Cost: 10683.0;
```

```
1117 Iterations: 64245749
1118 Temperature: 0.5827836751035133; Cost: 10547.0;
    Iterations: 65298958
1119 Temperature: 0.5245053075931619; Cost: 10429.0;
    Iterations: 66352167
1120 Temperature: 0.4720547768338458; Cost: 10331.0;
    Iterations: 67405376
1121 Temperature: 0.4248492991504612; Cost: 10235.0;
    Iterations: 68458585
1122 Temperature: 0.3823643692354151; Cost: 10158.0;
    Iterations: 69511794
1123 Temperature: 0.3441279323118736; Cost: 10128.0;
    Iterations: 70565003
1124 Final cost: 10128.0
1125 Total iterations: 70565003
1126 Took 5388.112134218216
1127 Running: apex4.txt-0.9-20-25
1128 1400
1129 Initial temperature: 800.7589257341169
1130 Temperature: 720.6830331607052; Cost: 43140.0;
    Iterations: 351070
1131 Temperature: 648.6147298446348; Cost: 43528.0;
    Iterations: 702140
1132 Temperature: 583.7532568601713; Cost: 43031.0;
    Iterations: 1053210
1133 Temperature: 525.3779311741541; Cost: 43557.0;
    Iterations: 1404280
1134 Temperature: 472.84013805673874; Cost: 43263.0;
    Iterations: 1755350
1135 Temperature: 425.5561242510649; Cost: 43281.0;
    Iterations: 2106420
1136 Temperature: 383.0005118259584; Cost: 43930.0;
    Iterations: 2457490
1137 Temperature: 344.7004606433626; Cost: 43599.0;
    Iterations: 2808560
1138 Temperature: 310.23041457902633; Cost: 43666.0;
    Iterations: 3159630
1139 Temperature: 279.2073731211237; Cost: 42802.0;
    Iterations: 3510700
1140 Temperature: 251.28663580901133; Cost: 42963.0;
    Iterations: 3861770
1141 Temperature: 226.1579722281102; Cost: 41756.0;
    Iterations: 4212840
1142 Temperature: 203.54217500529919; Cost: 42364.0;
```

```
1142 Iterations: 4563910
1143 Temperature: 183.18795750476926; Cost: 41815.0;
    Iterations: 4914980
1144 Temperature: 164.86916175429235; Cost: 42282.0;
    Iterations: 5266050
1145
1146 Process finished with exit code -1
1147
```