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Best regards,

ODTÜClass Support Team

## [CENG 315 All Sections] Algorithms

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 Description

 [Submission view](#)

### THE6

 **Available from:** Friday, December 16, 2022, 11:59 AM

 **Due date:** Saturday, December 17, 2022, 1:59 AM

 **Requested files:** the6.cpp, test.cpp, testcase1.txt, testcase2.txt, testcase3.txt, testcase4.txt, testcase5.txt, testcase6.txt, testcase7.txt, testcase8.txt, testcase9.txt, testcase10.txt, solution.cpp ( [Download](#))

**Type of work:**  Individual work

#### Problem:

The winter has come, yet the radiators are not made to work and METU Ceng students are freezing. All department students want is to be able to study in the department laboratories and study-rooms for 7x24. However, they can't do it because of the freezing cold of the department at nights. When they ask the Energy Department of the University to work the radiators, they take the following answer:

"

Dear students,

We lost the 'pipeline usage plan' that provides us to work the radiators economically at the university overall. By using that plan, it is possible to activate the furnace rooms of only the keypoint buildings and work the radiators of the other buildings via the pipelines connected to those keypoints. Nonetheless, without the plan, we have to either activate all the furnace rooms (the furnace room of each building), or deactivate all. Since our budget can not afford to apply the first choice, we apply the second choice. We hope to find the usage plan as soon as possible.

"

Upon this reply, the lovely and clever 3rd class Ceng students become volunteer to solve the problem since they do no want to freeze anymore. They ask the map of pipelines in the university and start to work on a new pipeline usage plan.



**The old CENG students who could not solve the problem...**



## PART-I

You should find a solution such that radiators of each building could be manageable and the resulting energy consumption should be in the minimum level.

- Radiators of a building become manageable either via activation of the furnace room of that building or via a pipeline connecting it to another building whose radiators are managed (by its own furnace room or again via a pipeline connected to some other building, so on).
- Each building has its own furnace room.
- Amount of the energy consumption is defined differently for each managing method. That is, each pipeline providing the energy transfer between the departments have a different cost (results in a different amount of energy consumption). Also, for each building the cost of activating its own furnace room differs.
- Note that it is necessary to activate the furnace room of at least one building (this becomes the source), so the others can find the energy through the pipelines reaching them to the source somehow.
- There can be more than one pipeline connection between two buildings, or between the building itself and its furnace room.
- There may be more than one cheapest way to warm up the whole university. It is enough for you to find only one.

### Implementation:

- Each pipeline is defined as below:

```
struct Pipeline {
    int id;
    int end1;
    int end2;
    int cost_of_consumption;
};
```

- *id* is a unique integer representing the id of the pipeline.
- *end1* and *end2* represents the building ids connected via the pipeline. Each building also has a unique id. If *end1=end2*, then it means the pipeline represents the connection between the building itself and its own furnace room.
- *amount\_of\_consumption* is the cost/amount of the consumption caused by the usage of that pipeline.
- You will implement the following function for the solution:

```
vector<int> plan_min_cost_pipeline_usage(vector<Pipeline*> pipelines, int num_of_buildings);
```

- *vector<Pipeline\*> pipelines* holds the pipeline map of the university. Each pipeline is uniquely given in this vector. (The uniqueness is satisfied by the pipelined ids, the other Pipeline members may be the same.)
- *int num\_of\_buildings* is the total number of buildings located in the university.

- The function returns the usage plan holding the ids of the pipelines providing to warm up each building with the minimum cost/amount.
- The ordering of the ids in the returned vector is not important.

## PART-II

After you find a solution in the first part, the Energy Department informs you that the current pipeline map is missing. They say that there actually exists one more pipeline which has been forgotten to put into the map. They request you to update your solution by considering this pipeline. It is also possible the pipeline does not affect the current solution, yet you should check it too.

### Implementation:

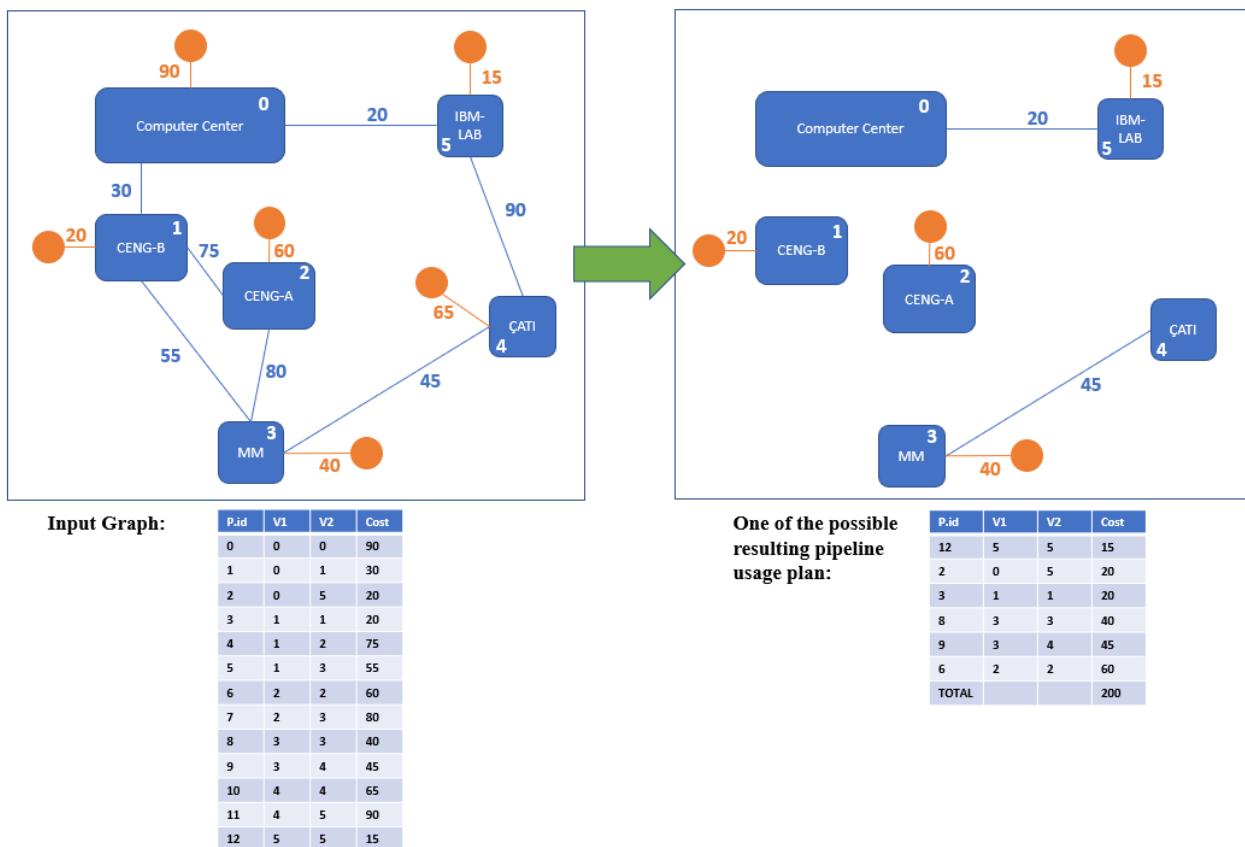
- You will implement the following function for the solution:

```
vector<int> optimize_plan(vector<Pipeline*> current_solution, Pipeline* new_pipeline);
```

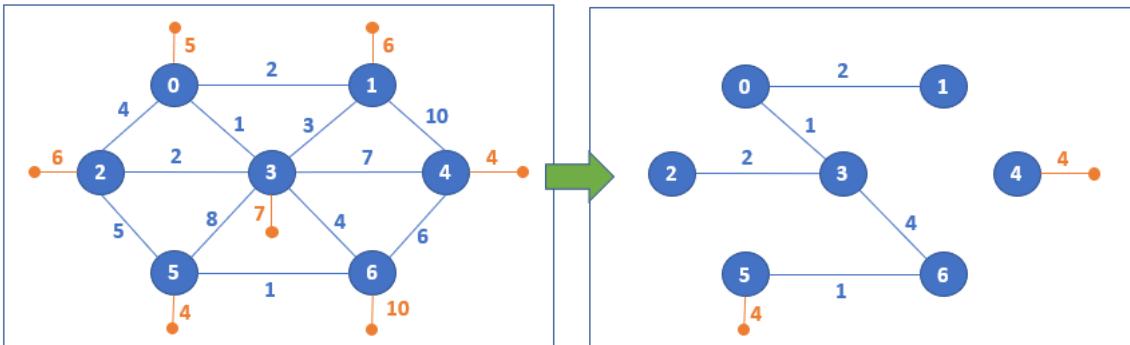
- vector<Pipeline\*> current\_solution* is the solution that is expected to be found in the PART-I, yet the vector holds the pipelines themselves, not their ids.. We will call the method by supplying this solution in the first argument.
- Pipeline\* new\_pipeline* is the new pipeline which is missing in the previous map.
- The function returns the updated usage plan holding the ids of the pipelines.
- The ordering of the ids in the returned vector is not important.
- You are required to implement a O(N) solution where N is the number of buildings. This requirement consists of 20% of THE in grading.**
- Note that it would be enough to hold an efficient data structure like **adjacency matrix of the graph**. There is no need to use complex structures like heap etc.

### Example IO:

#### Example-1:



#### Example-2:



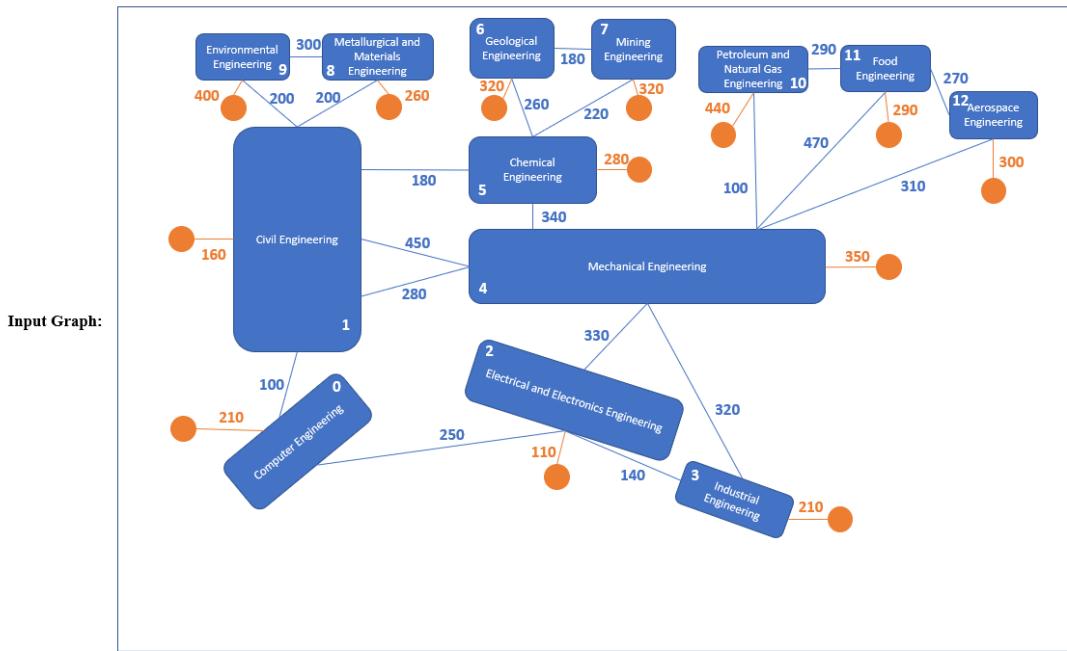
**Input Graph:**

P.id	V1	V2	Cost
0	0	1	2
1	0	2	5
2	0	3	1
3	0	0	5
4	1	3	3
5	1	4	10
6	1	1	6
7	2	3	2
8	2	5	5
9	2	2	6
10	3	4	7
11	3	5	8
12	3	6	4
13	3	3	7
14	4	6	6
15	4	4	4
16	5	6	1
17	5	5	4
18	6	6	10

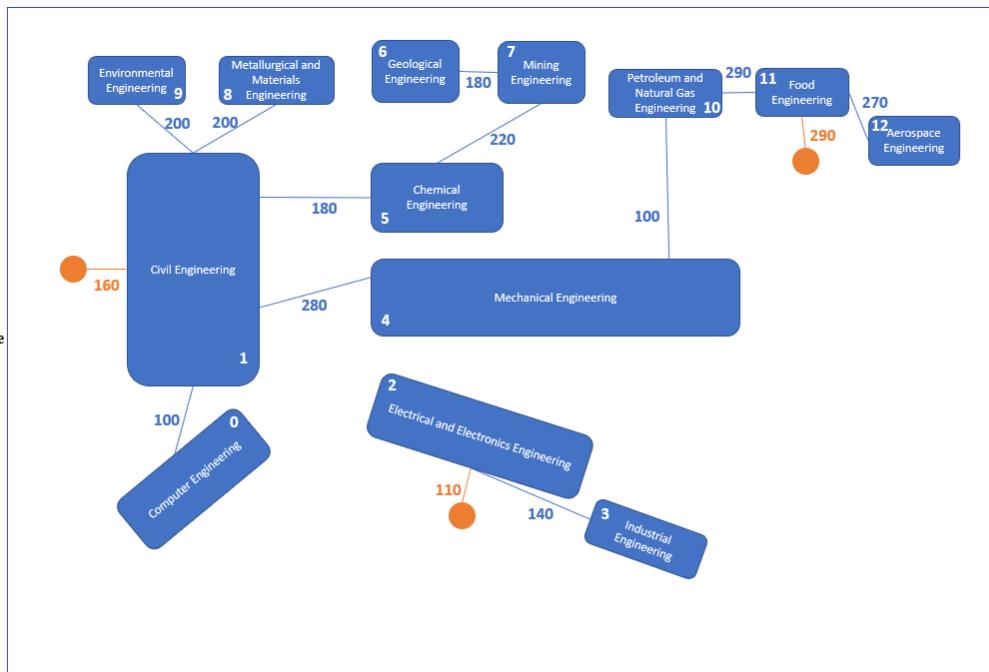
**One of the possible resulting pipeline usage plan:**

P.id	V1	V2	Cost
0	0	1	2
2	0	3	1
7	2	3	2
12	3	6	4
15	4	4	4
16	5	6	1
17	5	5	4
TOTAL			18

**Example-3:**



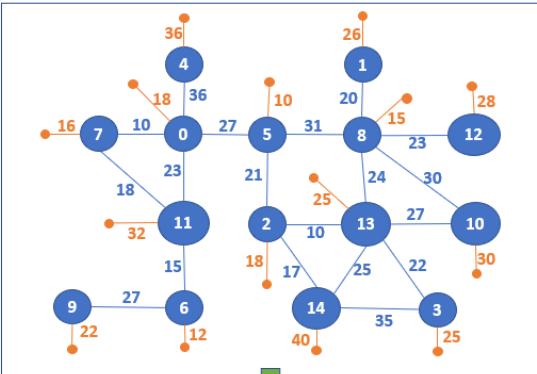
P.id	V1	V2	Cost
0	0	0	210
1	0	1	100
2	0	2	250
3	1	1	160
4	1	4	280
5	1	4	450
6	1	5	180
7	1	8	200
8	1	9	200
9	2	2	110
10	2	3	140
11	2	4	330
12	3	3	210
13	3	4	320
14	4	4	350
15	4	5	340
16	4	10	100
17	4	11	470
18	4	12	310
19	5	5	280
20	5	6	260
21	5	7	220
22	6	6	320
23	6	7	180
24	7	7	320
25	8	8	260
26	8	9	300
27	9	9	400
28	10	10	440
29	10	11	290
30	11	11	290
31	11	12	270
32	12	12	300



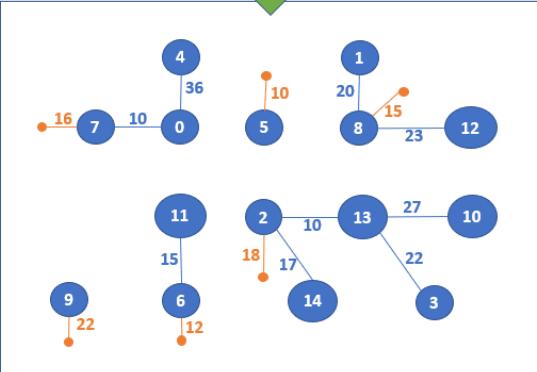
P.id	V1	V2	Cost
1	0	1	100
16	4	10	100
9	2	2	110
10	2	3	140
3	1	1	160
6	1	5	180
23	6	7	180
7	1	8	200
8	1	9	200
21	5	7	220
31	11	12	270
4	1	4	280
29	10	11	290
TOTAL			2430

**Example-4:**

**Input Graph:**



**One of the possible resulting pipeline usage plan:**



P.id	V1	V2	Cost
0	0	0	18
1	0	4	36
2	0	5	27
3	0	7	10
4	0	11	23
5	1	26	
6	1	8	20
7	2	2	18
8	2	5	21
9	2	13	10
10	2	14	17
11	3	3	25
12	3	13	22
13	3	14	35
14	4	4	36
15	5	5	10
16	5	8	31
17	6	6	12
18	6	9	27
19	6	11	15
20	7	7	16
21	7	11	18
22	8	8	15
23	8	10	30
24	8	12	23
25	8	13	24
26	9	9	22
27	10	10	30
28	10	13	27
29	11	11	32
30	12	12	28
31	13	13	25
32	13	14	25
33	14	14	40
TOTAL			
273			

### Constraints:

- Maximum number of buildings in the university will be 512.
- Maximum number of pipelines is 4096.
- Only for the Testcase-11, this limits change. Maximum number of buildings for this testcase is  $2^{18}$ .

### Evaluation:

- After your exam, black box evaluation will be carried out. You will get full points if your both function returns the correct result without exceeding time limit.
- There are 10 testcases to test output of the functions. PART-I is 7 points and PART-II is 1 points for each.
- There is one last testcase (Testcase-11) which checks the complexity of your implementation for PART-II. This testcase will be run only if you get full credit for Part-II implementation from all other testcases. If your Part-II implementation is  $O(N)$  (where N is the number of buildings), then you get 20 points. If it is more, then you get 0.
- The grading of PART-I and PART-II are independent from each other. Only the Testcase-11 is dependent to get full credit from PART-II for each testcase.

### Specifications:

- There are **only 2 tasks** to be solved in **12 hours** in this take home exam.
- You will implement your solutions in **the6.cpp** file.
- Do **not** change the first line of **the6.cpp**, which is **#include "the6.h"**
- **<iostream>, <climits>, <vector>, <stack>, <queue>, <unordered\_set>** are included in "the6.h" for your convenience.
- Do **not** change the arguments and return **types** of the functions. (You should change return **value**, on the other hand.)
- Do **not** include any other library or write include anywhere in your **the6.cpp** file (not even in comments)

### Compilation:

- You are given **test.cpp** file to **test** your work on **ODTÜClass** or your **locale**. You can and you are encouraged to modify this file to add different test cases.
- If you want to **test** your work and see your outputs you can **compile and run** your work on your locale as:

```
>g++ test.cpp the6.cpp -Wall -std=c++11 -o test
> ./test
```

- You can test your **the6.cpp** on virtual lab environment. If you click **run**, your function will be compiled and executed with **test.cpp**. If you click **evaluate**, you will get a feedback for your current work and your work will be **temporarily** graded for **limited** number of inputs.
- The grade you see in lab is **not** your final grade, your code will be re-evaluated with **completely different** inputs after the exam.

The system has the following limits:

- a maximum execution time of 32 seconds for the Testcases 1-10, and 60 seconds for the Testcase11
- a 4GiB maximum memory limit
- an execution file size of 128MiB
- If you are sure that your solution works in the expected complexity constrains but your evaluation fails due to limits in the lab environment, the constant factors may be the problem.

```
vector<int> plan_min_cost_pipeline_usage(vector<Pipeline*> pipelines, int num_of_buildings);
vector<int> optimize_plan(vector<Pipeline*> current_solution, Pipeline* new_pipeline);
```



## Requested files

### the6.cpp

```

1  #include "the6.h"
2
3  /*
4   * in the6.h "struct Pipeline" is defined as below:
5
6   struct Pipeline {
7       int id;           // pipeline id
8       int end1;         // id of the building-1
9       int end2;         // id of the building-2
10      int cost_of_consumption; // amount/cost of consumption for pipeline
11  };
12
13 */
14
15
16 vector<int> plan_min_cost_pipeline_usage(vector<Pipeline*> pipelines, int num_of_buildings) {
17
18     vector<int> solution;
19
20     //your code here
21
22
23     return solution; // this is a dummy return value. YOU SHOULD CHANGE THIS!
24
25 }
26
27 vector<int> optimize_plan(vector<Pipeline*> current_solution, Pipeline* new_pipeline) {
28
29     vector<int> solution;
30
31     //your code here
32
33
34     return solution; // this is a dummy return value. YOU SHOULD CHANGE THIS!
35
36 }
37
38 }
```

### test.cpp

```

1 // this file is for you for testing purposes, it won't be included in evaluation.
2
3 #include <iostream>
4 #include <random>
5 #include <ctime>
6 #include <cstdlib>
7 #include "the6.h"
8
9 #define MAX_WEIGHT 1000
10 #define MIN_WEIGHT 5
11
12 Pipeline* createPipeline(int v1, int v2, int cost_of_consumption, int id) {
13     Pipeline* p = new Pipeline;
14     p->id = id;
15     p->end1 = v1;
16     p->end2 = v2;
17     p->cost_of_consumption = cost_of_consumption;
18     return p;
19 }
20
21 void randomGraph(vector<Pipeline*>& pipelines, int size) {
22
23     int numOfVerts = size;
24     int degree = numOfVerts/5;
25     int numOfEdges = (degree * numOfVerts) / 3;
26     numOfEdges = rand() % numOfEdges;
27     numOfEdges = numOfEdges < numOfVerts ? numOfEdges : numOfVerts;
28
29
30     // generate edges
31     vector<int> current_degrees;
32     for (int i = 0; i < numOfVerts; i++) {
33         current_degrees.push_back(0);
34         pipelines.push_back(createPipeline(i, i, rand() % MAX_WEIGHT + MIN_WEIGHT, pipelines.size()));
35     }
36
37     for (int i = 0; i < numOfEdges; ) {
38         int v1 = rand() % numOfVerts;
39         int v2 = rand() % numOfVerts;
40
41         if (current_degrees[v1] == degree || current_degrees[v2] == degree)
42             continue;
43
44         current_degrees[v1]++;
45         current_degrees[v2]++;
46
47         pipelines.push_back(createPipeline(v1, v2, rand() % MAX_WEIGHT + MIN_WEIGHT, pipelines.size()));
48         i++;
49     }
50
51     bool make_connected = rand() % 2;
52
53     if (make_connected) {
54         // define components
55         vector<vector<int>> components; // disconnected subgraphs
56         for (int i = 0; i < numOfVerts; i++) {
57             vector<int> component;
58             component.push_back(i);
59             component.push_back(i);
60             components.push_back(component);
61         }
62
63         for (int i = 0; i < numOfEdges ; i++) {
64             int v1 = pipelines[i+numOfVerts]->end1;
65             int v2 = pipelines[i+numOfVerts]->end2;
66             if (components[v1][0] == components[v2][0])
67                 continue;
68             else {
69                 int c1 = components[v1][0];
70                 int c2 = components[v2][0];
71
72                 for (int c = 1; c < components[c2].size(); c++) {
73                     components[c1].push_back(components[c2][c]);
74                     components[components[c2][c]][0] = c1;
75                 }
76             }
77         }
78
79         vector<int> component_ids;
80         for (int i = 0; i < numOfVerts; i++) {
81             if (components[i][0] == i)
82                 component_ids.push_back(i);
83         }
84
85         // make connected
86         for (int i = 1; i < component_ids.size(); i++) {
87             int c1 = component_ids[0];
88             int c2 = component_ids[i];
89
90             int ind1 = rand() % (components[c1].size()-1) + 1;
91             int ind2 = rand() % (components[c2].size()-1) + 1;
92
93             int v1 = components[c1][ind1];
94             int v2 = components[c2][ind2];
95
96             pipelines.push_back(createPipeline(v1, v2, rand() % MAX_WEIGHT + MIN_WEIGHT, pipelines.size()));
97
98             for (int c = 1; c < components[c2].size(); c++)
99                 components[c1].push_back(components[c2][c]);
100        }
101    }
102
103 }
104
105 void copyGraph(vector<Pipeline*>& pipelines, vector<Pipeline*>& pipelines_copy) {
106
107     for (int i = 0; i < pipelines_copy.size(); i++) {
108         if (pipelines_copy[i])
109             delete pipelines_copy[i];
110     }

```

```

110     pipelines_copy[i] = NULL;
111 }
112 pipelines_copy.clear();
113
114 for (int i = 0; i < pipelines.size(); i++) {
115     Pipeline* p = createPipeline(pipelines[i]->end1, pipelines[i]->end2, pipelines[i]->cost_of_consumption, pipelines[i]->id);
116     pipelines_copy.push_back(p);
117 }
118 }
119
120 void manualGraph(vector<Pipeline*>& pipelines, int& size) {
121
122     // EXAMPLE-1
123     /*
124     size = 6;
125     pipelines.push_back(createPipeline(0, 0, 90, pipelines.size()));
126     pipelines.push_back(createPipeline(0, 1, 30, pipelines.size()));
127     pipelines.push_back(createPipeline(0, 5, 20, pipelines.size()));
128     pipelines.push_back(createPipeline(1, 1, 20, pipelines.size()));
129     pipelines.push_back(createPipeline(1, 2, 75, pipelines.size()));
130     pipelines.push_back(createPipeline(1, 3, 55, pipelines.size()));
131     pipelines.push_back(createPipeline(2, 2, 60, pipelines.size()));
132     pipelines.push_back(createPipeline(2, 3, 80, pipelines.size()));
133     pipelines.push_back(createPipeline(3, 3, 40, pipelines.size()));
134     pipelines.push_back(createPipeline(3, 4, 45, pipelines.size()));
135     pipelines.push_back(createPipeline(4, 4, 65, pipelines.size()));
136     pipelines.push_back(createPipeline(4, 5, 90, pipelines.size()));
137     pipelines.push_back(createPipeline(5, 5, 15, pipelines.size()));
138     */
139
140
141     // EXAMPLE-2
142     /*
143     size = 7;
144     pipelines.push_back(createPipeline(0, 1, 2, pipelines.size()));
145     pipelines.push_back(createPipeline(0, 2, 4, pipelines.size()));
146     pipelines.push_back(createPipeline(0, 3, 1, pipelines.size()));
147     pipelines.push_back(createPipeline(0, 0, 5, pipelines.size()));
148     pipelines.push_back(createPipeline(1, 3, 3, pipelines.size()));
149     pipelines.push_back(createPipeline(1, 4, 10, pipelines.size()));
150     pipelines.push_back(createPipeline(1, 1, 6, pipelines.size()));
151     pipelines.push_back(createPipeline(2, 3, 2, pipelines.size()));
152     pipelines.push_back(createPipeline(2, 5, 5, pipelines.size()));
153     pipelines.push_back(createPipeline(2, 2, 6, pipelines.size()));
154     pipelines.push_back(createPipeline(3, 4, 7, pipelines.size()));
155     pipelines.push_back(createPipeline(3, 5, 8, pipelines.size()));
156     pipelines.push_back(createPipeline(3, 6, 4, pipelines.size()));
157     pipelines.push_back(createPipeline(3, 3, 7, pipelines.size()));
158     pipelines.push_back(createPipeline(4, 6, 6, pipelines.size()));
159     pipelines.push_back(createPipeline(4, 4, 4, pipelines.size()));
160     pipelines.push_back(createPipeline(5, 6, 1, pipelines.size()));
161     pipelines.push_back(createPipeline(5, 5, 4, pipelines.size()));
162     pipelines.push_back(createPipeline(6, 6, 10, pipelines.size()));
163     */
164
165     // EXAMPLE-3
166     /*
167     size = 13;
168     pipelines.push_back(createPipeline(0, 0, 210, pipelines.size()));
169     pipelines.push_back(createPipeline(0, 1, 100, pipelines.size()));
170     pipelines.push_back(createPipeline(0, 2, 250, pipelines.size()));
171     pipelines.push_back(createPipeline(1, 1, 160, pipelines.size()));
172     pipelines.push_back(createPipeline(1, 4, 280, pipelines.size()));
173     pipelines.push_back(createPipeline(1, 4, 450, pipelines.size()));
174     pipelines.push_back(createPipeline(1, 5, 180, pipelines.size()));
175     pipelines.push_back(createPipeline(1, 8, 200, pipelines.size()));
176     pipelines.push_back(createPipeline(1, 9, 200, pipelines.size()));
177     pipelines.push_back(createPipeline(2, 2, 110, pipelines.size()));
178     pipelines.push_back(createPipeline(2, 3, 140, pipelines.size()));
179     pipelines.push_back(createPipeline(2, 4, 330, pipelines.size()));
180     pipelines.push_back(createPipeline(3, 3, 210, pipelines.size()));
181     pipelines.push_back(createPipeline(3, 4, 320, pipelines.size()));
182     pipelines.push_back(createPipeline(4, 4, 350, pipelines.size()));
183     pipelines.push_back(createPipeline(4, 5, 340, pipelines.size()));
184     pipelines.push_back(createPipeline(4, 10, 100, pipelines.size()));
185     pipelines.push_back(createPipeline(4, 11, 470, pipelines.size()));
186     pipelines.push_back(createPipeline(4, 12, 310, pipelines.size()));
187     pipelines.push_back(createPipeline(5, 5, 280, pipelines.size()));
188     pipelines.push_back(createPipeline(5, 6, 260, pipelines.size()));
189     pipelines.push_back(createPipeline(5, 7, 220, pipelines.size()));
190     pipelines.push_back(createPipeline(6, 6, 320, pipelines.size()));
191     pipelines.push_back(createPipeline(6, 7, 180, pipelines.size()));
192     pipelines.push_back(createPipeline(7, 7, 320, pipelines.size()));
193     pipelines.push_back(createPipeline(8, 8, 260, pipelines.size()));
194     pipelines.push_back(createPipeline(8, 9, 300, pipelines.size()));
195     pipelines.push_back(createPipeline(9, 9, 400, pipelines.size()));
196     pipelines.push_back(createPipeline(10, 10, 440, pipelines.size()));
197     pipelines.push_back(createPipeline(10, 11, 290, pipelines.size()));
198     pipelines.push_back(createPipeline(11, 11, 290, pipelines.size()));
199     pipelines.push_back(createPipeline(11, 12, 270, pipelines.size()));
200     pipelines.push_back(createPipeline(12, 12, 300, pipelines.size()));
201     */
202
203     // EXAMPLE-4
204     /*
205     size = 15;
206     pipelines.push_back(createPipeline(0, 0, 18, pipelines.size()));
207     pipelines.push_back(createPipeline(0, 4, 36, pipelines.size()));
208     pipelines.push_back(createPipeline(0, 5, 27, pipelines.size()));
209     pipelines.push_back(createPipeline(0, 7, 10, pipelines.size()));
210     pipelines.push_back(createPipeline(0, 11, 23, pipelines.size()));
211     pipelines.push_back(createPipeline(1, 1, 26, pipelines.size()));
212     pipelines.push_back(createPipeline(1, 8, 20, pipelines.size()));
213     pipelines.push_back(createPipeline(2, 2, 18, pipelines.size()));
214     pipelines.push_back(createPipeline(2, 5, 21, pipelines.size()));
215     pipelines.push_back(createPipeline(2, 13, 10, pipelines.size()));
216     pipelines.push_back(createPipeline(2, 14, 17, pipelines.size()));
217     pipelines.push_back(createPipeline(3, 3, 25, pipelines.size()));
218     pipelines.push_back(createPipeline(3, 13, 22, pipelines.size()));
219     pipelines.push_back(createPipeline(3, 14, 35, pipelines.size()));

```

```

220 pipelines.push_back(createPipeline(4, 4, 36, pipelines.size()));
221 pipelines.push_back(createPipeline(5, 5, 10, pipelines.size()));
222 pipelines.push_back(createPipeline(5, 8, 31, pipelines.size()));
223 pipelines.push_back(createPipeline(6, 6, 12, pipelines.size()));
224 pipelines.push_back(createPipeline(6, 9, 27, pipelines.size()));
225 pipelines.push_back(createPipeline(6, 11, 15, pipelines.size()));
226 pipelines.push_back(createPipeline(7, 7, 16, pipelines.size()));
227 pipelines.push_back(createPipeline(7, 11, 18, pipelines.size()));
228 pipelines.push_back(createPipeline(8, 8, 15, pipelines.size()));
229 pipelines.push_back(createPipeline(8, 10, 30, pipelines.size()));
230 pipelines.push_back(createPipeline(8, 12, 23, pipelines.size()));
231 pipelines.push_back(createPipeline(8, 13, 24, pipelines.size()));
232 pipelines.push_back(createPipeline(9, 9, 22, pipelines.size()));
233 pipelines.push_back(createPipeline(10, 10, 30, pipelines.size()));
234 pipelines.push_back(createPipeline(10, 13, 27, pipelines.size()));
235 pipelines.push_back(createPipeline(11, 11, 32, pipelines.size()));
236 pipelines.push_back(createPipeline(12, 12, 28, pipelines.size()));
237 pipelines.push_back(createPipeline(13, 13, 25, pipelines.size()));
238 pipelines.push_back(createPipeline(13, 14, 25, pipelines.size()));
239 pipelines.push_back(createPipeline(14, 14, 40, pipelines.size()));
240 /*
241 }
242 }
243 void printGraphInLine(vector<Pipeline*> pipelines){
244     std::cout << "{\n";
245     for(int i = 0; i < pipelines.size(); i++){
246         std::cout << " PIPELINE " << i << ", " << std::endl;
247         std::cout << "    between: " << pipelines[i]->end1 << " and " << pipelines[i]->end2 << ", " << std::endl;
248         std::cout << "    cost of consumption: " << pipelines[i]->cost_of_consumption << std::endl;
249     }
250     std::cout << "}" << std::endl;
251 }
252 }
253 void printVectorInLine(vector<int> output) {
254     for(int i = 0; i < output.size(); i++) {
255         std::cout << output[i];
256         if (i == output.size() - 1)
257             continue;
258         else
259             std::cout << ", ";
260     }
261     std::cout << std::endl;
262 }
263 */
264
265 void test(){
266     clock_t begin, end;
267     double duration;
268
269
270     int size = 15;
271     vector<Pipeline*> pipelines, pipelines_copy;
272     randomGraph(pipelines, size);
273     //manualGraph(pipelines, size);
274     copyGraph(pipelines, pipelines_copy);
275     int num_of_pipelines = pipelines.size();
276
277     std::cout << "Given Pipelines: " << std::endl;
278     printGraphInLine(pipelines);
279
280     std::cout << "\nNumber of Buildings: \n" << size << std::endl;
281
282     if ((begin = clock()) ==-1)
283         std::cerr << "clock error" << std::endl;
284
285     // PART-I
286     Vector<int> pipelined_structure = plan_min_cost_pipeline_usage(pipelines, size);
287
288     if ((end = clock()) ==-1)
289         std::cerr << "clock error" << std::endl;
290
291     duration = (1000.0 * ((double) end - begin)) / CLOCKS_PER_SEC;
292     std::cout << "Duration for PART-I: " << duration << " milliseconds." << std::endl;
293
294     std::cout << "\nPART-I: Built Pipeline Structure of the Algorithm: " << std::endl;
295     printVectorInLine(pipelined_structure);
296
297     // PART-II
298     Pipeline* new_pipeline = createPipeline(rand() % size, rand() % size, rand() % MAX_WEIGHT + MIN_WEIGHT, num_of_pipelines);
299     vector<Pipeline*> part1_solution;
300     for (int i = 0; i < pipelined_structure.size(); i++)
301         part1_solution.push_back(pipelines_copy[pipelined_structure[i]]);
302
303     if ((begin = clock()) ==-1)
304         std::cerr << "clock error" << std::endl;
305
306     Vector<int> updated_pipelined_structure = optimize_plan(part1_solution, new_pipeline);
307
308     if ((end = clock()) ==-1)
309         std::cerr << "clock error" << std::endl;
310
311     std::cout << "New Pipeline Structure: " << std::endl;
312     printVectorInLine(updated_pipelined_structure);
313
314     if ((end = clock()) ==-1)
315         std::cerr << "clock error" << std::endl;
316
317     duration = (1000.0 * ((double) end - begin)) / CLOCKS_PER_SEC;
318     std::cout << "Duration for PART-II: " << duration << " milliseconds." << std::endl;
319
320     std::cout << "\nPART-II: Updated pipeline structure of the Algorithm: " << std::endl;
321     printVectorInLine(updated_pipelined_structure);
322
323     std::cout << "-----";
324     std::cout << "\n" << std::endl;
325
326 }
327
328 int main()

```

```
329  {
330      srand(time(0));
331      test();
332      return 0;
333  }
334
```

## testcase1.txt

```
1  ----- CASE 1 -----
2
3 CASE 1
4 -----
5
6 Given Pipelines:
7  {
8     PIPELINE 0,
9         between: 0 and 0,
10        cost of consumption: 784
11    PIPELINE 1,
12        between: 1 and 1,
13        cost of consumption: 518
14    PIPELINE 2,
15        between: 2 and 2,
16        cost of consumption: 403
17    PIPELINE 3,
18        between: 3 and 3,
19        cost of consumption: 609
20    PIPELINE 4,
21        between: 4 and 4,
22        cost of consumption: 146
23    PIPELINE 5,
24        between: 5 and 5,
25        cost of consumption: 808
26    PIPELINE 6,
27        between: 6 and 6,
28        cost of consumption: 575
29    PIPELINE 7,
30        between: 7 and 7,
31        cost of consumption: 273
32    PIPELINE 8,
33        between: 7 and 2,
34        cost of consumption: 288
35    PIPELINE 9,
36        between: 1 and 1,
37        cost of consumption: 221
38    PIPELINE 10,
39        between: 4 and 3,
40        cost of consumption: 957
41    PIPELINE 11,
42        between: 5 and 5,
43        cost of consumption: 176
44    PIPELINE 12,
45        between: 0 and 6,
46        cost of consumption: 841
47    PIPELINE 13,
48        between: 5 and 5,
49        cost of consumption: 918
50    PIPELINE 14,
51        between: 1 and 5,
52        cost of consumption: 809
53    PIPELINE 15,
54        between: 1 and 5,
55        cost of consumption: 601
56    PIPELINE 16,
57        between: 0 and 1,
58        cost of consumption: 511
59    PIPELINE 17,
60        between: 0 and 4,
61        cost of consumption: 208
62    PIPELINE 18,
63        between: 3 and 7,
64        cost of consumption: 391
65  }
66
67 Number of Buildings:
68 8
69
70 Builded Pipelined Structure of the Algorithm:
71
72 Expected pipelined structure : 4, 11, 17, 9, 7, 8, 18, 6
73
74 Returned pipelined structure :4, 11, 17, 9, 7, 8, 18, 6
75
76 CASE 1-initial pipeline construction of the algorithm: [OK]
77
78
79 The new pipeline :
80  {
81     PIPELINE 19,
82         between: 5 and 7,
83         cost of consumption: 242
84  }
85
86 Expected updated pipelined structure : 4, 11, 17, 9, 19, 8, 18, 6
87
88 Returned updated pipelined structure :4, 11, 17, 9, 19, 8, 18, 6
89
90 CASE 1-updated pipeline construction of the algorithm: [OK]
91 -----
92 -----
93 -----
94
```

## testcase2.txt

```
1 ----- CASE 2 -----
2
3 CASE 2
4 -----
5
6 Given Pipelines:
7 {
8   PIPELINE 0,
9     between: 0 and 0,
10    cost of consumption: 756
11   PIPELINE 1,
12     between: 1 and 1,
13    cost of consumption: 956
14   PIPELINE 2,
15     between: 2 and 2,
16    cost of consumption: 797
17   PIPELINE 3,
18     between: 3 and 3,
19    cost of consumption: 459
20   PIPELINE 4,
21     between: 4 and 4,
22    cost of consumption: 495
23   PIPELINE 5,
24     between: 5 and 5,
25    cost of consumption: 118
26   PIPELINE 6,
27     between: 6 and 6,
28    cost of consumption: 74
29   PIPELINE 7,
30     between: 7 and 7,
31    cost of consumption: 525
32   PIPELINE 8,
33     between: 8 and 8,
34    cost of consumption: 411
35   PIPELINE 9,
36     between: 9 and 9,
37    cost of consumption: 255
38   PIPELINE 10,
39     between: 10 and 10,
40    cost of consumption: 760
41   PIPELINE 11,
42     between: 11 and 11,
43    cost of consumption: 968
44   PIPELINE 12,
45     between: 12 and 12,
46    cost of consumption: 240
47   PIPELINE 13,
48     between: 13 and 13,
49    cost of consumption: 462
50   PIPELINE 14,
51     between: 14 and 14,
52    cost of consumption: 319
53   PIPELINE 15,
54     between: 15 and 15,
55    cost of consumption: 107
56   PIPELINE 16,
57     between: 3 and 8,
58    cost of consumption: 85
59   PIPELINE 17,
60     between: 1 and 11,
61    cost of consumption: 113
62   PIPELINE 18,
63     between: 6 and 9,
64    cost of consumption: 279
65   PIPELINE 19,
66     between: 0 and 15,
67    cost of consumption: 351
68   PIPELINE 20,
69     between: 7 and 9,
70    cost of consumption: 284
71   PIPELINE 21,
72     between: 14 and 8,
73    cost of consumption: 428
74   PIPELINE 22,
75     between: 5 and 11,
76    cost of consumption: 541
77   PIPELINE 23,
78     between: 2 and 11,
79    cost of consumption: 948
80   PIPELINE 24,
81     between: 13 and 7,
82    cost of consumption: 263
83   PIPELINE 25,
84     between: 8 and 8,
85    cost of consumption: 578
86   PIPELINE 26,
87     between: 6 and 12,
88    cost of consumption: 874
89   PIPELINE 27,
90     between: 6 and 13,
91    cost of consumption: 829
92   PIPELINE 28,
93     between: 10 and 3,
94    cost of consumption: 655
95   PIPELINE 29,
96     between: 5 and 3,
97    cost of consumption: 390
98   PIPELINE 30,
99     between: 5 and 14,
100   cost of consumption: 755
101  PIPELINE 31,
102    between: 14 and 1,
103   cost of consumption: 943
104  PIPELINE 32,
105    between: 0 and 5,
106   cost of consumption: 620
107  PIPELINE 33,
108    between: 1 and 4,
109   cost of consumption: 545
110  PIPELINE 34
```

```
110     PIPELINE 34,  
111         between: 3 and 7,  
112         cost of consumption: 414  
113 }  
114  
115 Number of Buildings:  
116 16  
117  
118 Builded Pipelined Structure of the Algorithm:  
119  
120 Expected pipelined structure : 6, 16, 15, 17, 5, 12, 9, 24, 20, 14, 19, 29, 4, 22, 28, 2  
121  
122 Returned pipelined structure :6, 16, 15, 17, 5, 12, 9, 24, 20, 14, 19, 29, 4, 22, 28, 2  
123  
124 CASE 2-initial pipeline construction of the algorithm: [OK]  
125  
126  
127  
128 The new pipeline :  
129 {  
130     PIPELINE 35,  
131         between: 2 and 3,  
132         cost of consumption: 279  
133 }  
134  
135 Expected updated pipelined structure : 6, 16, 15, 17, 5, 12, 9, 24, 20, 14, 19, 29, 4, 22, 28, 2  
136  
137 Returned updated pipelined structure :6, 16, 15, 17, 5, 12, 9, 24, 20, 14, 19, 29, 4, 22, 28, 2  
138  
139 CASE 2-updated pipeline construction of the algorithm: [OK]  
140 -----  
141 -----
```

testcase3.txt

```
1 ----- CASE 3 -----
2
3 CASE 3
4 -----
5
6 Given Pipelines:
7 {
8   PIPELINE 0,
9     between: 0 and 0,
10    cost of consumption: 505
11   PIPELINE 1,
12     between: 1 and 1,
13    cost of consumption: 303
14   PIPELINE 2,
15     between: 2 and 2,
16    cost of consumption: 712
17   PIPELINE 3,
18     between: 3 and 3,
19    cost of consumption: 516
20   PIPELINE 4,
21     between: 4 and 4,
22    cost of consumption: 863
23   PIPELINE 5,
24     between: 5 and 5,
25    cost of consumption: 518
26   PIPELINE 6,
27     between: 6 and 6,
28    cost of consumption: 527
29   PIPELINE 7,
30     between: 7 and 7,
31    cost of consumption: 488
32   PIPELINE 8,
33     between: 8 and 8,
34    cost of consumption: 288
35   PIPELINE 9,
36     between: 9 and 9,
37    cost of consumption: 441
38   PIPELINE 10,
39     between: 10 and 10,
40    cost of consumption: 260
41   PIPELINE 11,
42     between: 11 and 11,
43    cost of consumption: 607
44   PIPELINE 12,
45     between: 12 and 12,
46    cost of consumption: 363
47   PIPELINE 13,
48     between: 13 and 13,
49    cost of consumption: 38
50   PIPELINE 14,
51     between: 14 and 14,
52    cost of consumption: 401
53   PIPELINE 15,
54     between: 15 and 15,
55    cost of consumption: 995
56   PIPELINE 16,
57     between: 16 and 16,
58    cost of consumption: 473
59   PIPELINE 17,
60     between: 17 and 17,
61    cost of consumption: 608
62   PIPELINE 18,
63     between: 18 and 18,
64    cost of consumption: 739
65   PIPELINE 19,
66     between: 19 and 19,
67    cost of consumption: 588
68   PIPELINE 20,
69     between: 20 and 20,
70    cost of consumption: 710
71   PIPELINE 21,
72     between: 21 and 21,
73    cost of consumption: 138
74   PIPELINE 22,
75     between: 22 and 22,
76    cost of consumption: 679
77   PIPELINE 23,
78     between: 23 and 23,
79    cost of consumption: 68
80   PIPELINE 24,
81     between: 24 and 24,
82    cost of consumption: 218
83   PIPELINE 25,
84     between: 25 and 25,
85    cost of consumption: 383
86   PIPELINE 26,
87     between: 26 and 26,
88    cost of consumption: 923
89   PIPELINE 27,
90     between: 27 and 27,
91    cost of consumption: 109
92   PIPELINE 28,
93     between: 28 and 28,
94    cost of consumption: 94
95   PIPELINE 29,
96     between: 29 and 29,
97    cost of consumption: 751
98   PIPELINE 30,
99     between: 30 and 30,
100   cost of consumption: 860
101  PIPELINE 31,
102    between: 31 and 31,
103   cost of consumption: 946
104  PIPELINE 32,
105    between: 4 and 18,
106   cost of consumption: 809
107  PIPELINE 33,
108    between: 14 and 19,
109   cost of consumption: 332
110  PIPELINE 34
```

```

110 PIPELINE 34,
111     between: 25 and 22,
112     cost of consumption: 120
113 PIPELINE 35,
114     between: 16 and 0,
115     cost of consumption: 830
116 PIPELINE 36,
117     between: 18 and 4,
118     cost of consumption: 820
119 PIPELINE 37,
120     between: 22 and 0,
121     cost of consumption: 906
122 PIPELINE 38,
123     between: 22 and 9,
124     cost of consumption: 39
125 PIPELINE 39,
126     between: 8 and 24,
127     cost of consumption: 604
128 PIPELINE 40,
129     between: 26 and 30,
130     cost of consumption: 709
131 PIPELINE 41,
132     between: 12 and 24,
133     cost of consumption: 916
134 PIPELINE 42,
135     between: 9 and 29,
136     cost of consumption: 830
137 PIPELINE 43,
138     between: 22 and 11,
139     cost of consumption: 609
140 PIPELINE 44,
141     between: 29 and 5,
142     cost of consumption: 23
143 PIPELINE 45,
144     between: 24 and 21,
145     cost of consumption: 40
146 PIPELINE 46,
147     between: 1 and 7,
148     cost of consumption: 452
149 PIPELINE 47,
150     between: 16 and 30,
151     cost of consumption: 468
152 PIPELINE 48,
153     between: 29 and 20,
154     cost of consumption: 541
155 PIPELINE 49,
156     between: 8 and 28,
157     cost of consumption: 29
158 PIPELINE 50,
159     between: 7 and 23,
160     cost of consumption: 84
161 PIPELINE 51,
162     between: 23 and 3,
163     cost of consumption: 588
164 PIPELINE 52,
165     between: 14 and 12,
166     cost of consumption: 137
167 PIPELINE 53,
168     between: 23 and 2,
169     cost of consumption: 941
170 PIPELINE 54,
171     between: 19 and 31,
172     cost of consumption: 186
173 PIPELINE 55,
174     between: 6 and 23,
175     cost of consumption: 71
176 PIPELINE 56,
177     between: 25 and 24,
178     cost of consumption: 335
179 PIPELINE 57,
180     between: 16 and 8,
181     cost of consumption: 797
182 PIPELINE 58,
183     between: 8 and 6,
184     cost of consumption: 689
185 PIPELINE 59,
186     between: 8 and 14,
187     cost of consumption: 37
188 PIPELINE 60,
189     between: 1 and 21,
190     cost of consumption: 572
191 PIPELINE 61,
192     between: 24 and 13,
193     cost of consumption: 383
194 PIPELINE 62,
195     between: 7 and 27,
196     cost of consumption: 764
197 PIPELINE 63,
198     between: 20 and 19,
199     cost of consumption: 870
200 }
201
202 Number of Buildings:
203 32
204
205 Builded Pipelined Structure of the Algorithm:
206
207 Expected pipelined structure : 44, 49, 59, 13, 38, 45, 23, 55, 50, 28, 27, 34, 52, 21, 54, 10, 1, 33, 56, 47, 16, 0, 3, 5, 48, 11, 17, 40, 2, 18, 32, 1
208
209 Returned pipelined structure :44, 49, 59, 13, 38, 45, 23, 55, 50, 28, 27, 34, 52, 21, 54, 10, 1, 33, 56, 47, 16, 0, 3, 5, 48, 11, 17, 40, 2, 18, 32, 1
210
211 CASE 3-initial pipeline construction of the algorithm: [OK]
212
213
214
215 The new pipeline :
216 {
217     PIPELINE 64,
218         between: 9 and 17,
219         cost of consumption: 267

```

```
220 } -----  
221  
222 Expected updated pipelined structure : 44, 49, 59, 13, 38, 45, 23, 55, 50, 28, 27, 34, 52, 21, 54, 10, 1, 33, 56, 47, 16, 0, 3, 5, 48, 11, 17, 40, 2, 1  
223  
224 Returned updated pipelined structure :44, 49, 59, 13, 38, 45, 23, 55, 50, 28, 27, 34, 52, 21, 54, 10, 1, 33, 56, 47, 16, 0, 3, 5, 48, 11, 17, 40, 2, 18  
225  
226 CASE 3-updated pipeline construction of the algorithm: [OK]  
227 -----  
228 -----  
229
```

testcase4.txt

```
1 ----- CASE 4 -----
2
3 CASE 4
4 -----
5
6 Given Pipelines:
7 {
8   PIPELINE 0,
9     between: 0 and 0,
10    cost of consumption: 569
11   PIPELINE 1,
12     between: 1 and 1,
13    cost of consumption: 160
14   PIPELINE 2,
15     between: 2 and 2,
16    cost of consumption: 639
17   PIPELINE 3,
18     between: 3 and 3,
19    cost of consumption: 351
20   PIPELINE 4,
21     between: 4 and 4,
22    cost of consumption: 693
23   PIPELINE 5,
24     between: 5 and 5,
25    cost of consumption: 18
26   PIPELINE 6,
27     between: 6 and 6,
28    cost of consumption: 765
29   PIPELINE 7,
30     between: 7 and 7,
31    cost of consumption: 86
32   PIPELINE 8,
33     between: 8 and 8,
34    cost of consumption: 821
35   PIPELINE 9,
36     between: 9 and 9,
37    cost of consumption: 177
38   PIPELINE 10,
39     between: 10 and 10,
40    cost of consumption: 834
41   PIPELINE 11,
42     between: 11 and 11,
43    cost of consumption: 178
44   PIPELINE 12,
45     between: 12 and 12,
46    cost of consumption: 632
47   PIPELINE 13,
48     between: 13 and 13,
49    cost of consumption: 103
50   PIPELINE 14,
51     between: 14 and 14,
52    cost of consumption: 601
53   PIPELINE 15,
54     between: 15 and 15,
55    cost of consumption: 46
56   PIPELINE 16,
57     between: 16 and 16,
58    cost of consumption: 69
59   PIPELINE 17,
60     between: 17 and 17,
61    cost of consumption: 351
62   PIPELINE 18,
63     between: 18 and 18,
64    cost of consumption: 818
65   PIPELINE 19,
66     between: 19 and 19,
67    cost of consumption: 130
68   PIPELINE 20,
69     between: 20 and 20,
70    cost of consumption: 700
71   PIPELINE 21,
72     between: 21 and 21,
73    cost of consumption: 553
74   PIPELINE 22,
75     between: 22 and 22,
76    cost of consumption: 435
77   PIPELINE 23,
78     between: 23 and 23,
79    cost of consumption: 449
80   PIPELINE 24,
81     between: 24 and 24,
82    cost of consumption: 624
83   PIPELINE 25,
84     between: 25 and 25,
85    cost of consumption: 60
86   PIPELINE 26,
87     between: 26 and 26,
88    cost of consumption: 593
89   PIPELINE 27,
90     between: 27 and 27,
91    cost of consumption: 213
92   PIPELINE 28,
93     between: 28 and 28,
94    cost of consumption: 25
95   PIPELINE 29,
96     between: 29 and 29,
97    cost of consumption: 327
98   PIPELINE 30,
99     between: 30 and 30,
100   cost of consumption: 974
101  PIPELINE 31,
102    between: 31 and 31,
103   cost of consumption: 942
104  PIPELINE 32,
105    between: 32 and 32,
106   cost of consumption: 482
107  PIPELINE 33,
108    between: 33 and 33,
109   cost of consumption: 608
110  PIPELINE 34
```

```
110 PIPELINE 34,  
111     between: 34 and 34,  
112     cost of consumption: 288  
113 PIPELINE 35,  
114     between: 35 and 35,  
115     cost of consumption: 522  
116 PIPELINE 36,  
117     between: 36 and 36,  
118     cost of consumption: 973  
119 PIPELINE 37,  
120     between: 37 and 37,  
121     cost of consumption: 401  
122 PIPELINE 38,  
123     between: 38 and 38,  
124     cost of consumption: 603  
125 PIPELINE 39,  
126     between: 39 and 39,  
127     cost of consumption: 141  
128 PIPELINE 40,  
129     between: 40 and 40,  
130     cost of consumption: 573  
131 PIPELINE 41,  
132     between: 41 and 41,  
133     cost of consumption: 785  
134 PIPELINE 42,  
135     between: 42 and 42,  
136     cost of consumption: 314  
137 PIPELINE 43,  
138     between: 43 and 43,  
139     cost of consumption: 552  
140 PIPELINE 44,  
141     between: 44 and 44,  
142     cost of consumption: 883  
143 PIPELINE 45,  
144     between: 45 and 45,  
145     cost of consumption: 262  
146 PIPELINE 46,  
147     between: 46 and 46,  
148     cost of consumption: 594  
149 PIPELINE 47,  
150     between: 47 and 47,  
151     cost of consumption: 947  
152 PIPELINE 48,  
153     between: 48 and 48,  
154     cost of consumption: 960  
155 PIPELINE 49,  
156     between: 49 and 49,  
157     cost of consumption: 759  
158 PIPELINE 50,  
159     between: 50 and 50,  
160     cost of consumption: 72  
161 PIPELINE 51,  
162     between: 51 and 51,  
163     cost of consumption: 655  
164 PIPELINE 52,  
165     between: 52 and 52,  
166     cost of consumption: 660  
167 PIPELINE 53,  
168     between: 53 and 53,  
169     cost of consumption: 502  
170 PIPELINE 54,  
171     between: 54 and 54,  
172     cost of consumption: 451  
173 PIPELINE 55,  
174     between: 55 and 55,  
175     cost of consumption: 631  
176 PIPELINE 56,  
177     between: 56 and 56,  
178     cost of consumption: 557  
179 PIPELINE 57,  
180     between: 57 and 57,  
181     cost of consumption: 39  
182 PIPELINE 58,  
183     between: 58 and 58,  
184     cost of consumption: 840  
185 PIPELINE 59,  
186     between: 59 and 59,  
187     cost of consumption: 930  
188 PIPELINE 60,  
189     between: 60 and 60,  
190     cost of consumption: 713  
191 PIPELINE 61,  
192     between: 61 and 61,  
193     cost of consumption: 809  
194 PIPELINE 62,  
195     between: 62 and 62,  
196     cost of consumption: 867  
197 PIPELINE 63,  
198     between: 63 and 63,  
199     cost of consumption: 190  
200 PIPELINE 64,  
201     between: 63 and 49,  
202     cost of consumption: 60  
203 PIPELINE 65,  
204     between: 31 and 45,  
205     cost of consumption: 658  
206 PIPELINE 66,  
207     between: 23 and 38,  
208     cost of consumption: 790  
209 PIPELINE 67,  
210     between: 4 and 57,  
211     cost of consumption: 668  
212 PIPELINE 68,  
213     between: 5 and 46,  
214     cost of consumption: 610  
215 PIPELINE 69,  
216     between: 56 and 9,  
217     cost of consumption: 678  
218 PIPELINE 70,  
219     between: 50 and 32.
```

```
--  
220      cost of consumption: 527  
221 PIPELINE 71,  
222      between: 40 and 26,  
223      cost of consumption: 432  
224 PIPELINE 72,  
225      between: 58 and 21,  
226      cost of consumption: 357  
227 PIPELINE 73,  
228      between: 39 and 1,  
229      cost of consumption: 571  
230 PIPELINE 74,  
231      between: 16 and 0,  
232      cost of consumption: 68  
233 PIPELINE 75,  
234      between: 7 and 31,  
235      cost of consumption: 962  
236 PIPELINE 76,  
237      between: 29 and 54,  
238      cost of consumption: 776  
239 PIPELINE 77,  
240      between: 6 and 58,  
241      cost of consumption: 137  
242 PIPELINE 78,  
243      between: 38 and 63,  
244      cost of consumption: 440  
245 PIPELINE 79,  
246      between: 19 and 55,  
247      cost of consumption: 497  
248 PIPELINE 80,  
249      between: 52 and 41,  
250      cost of consumption: 561  
251 PIPELINE 81,  
252      between: 23 and 17,  
253      cost of consumption: 251  
254 PIPELINE 82,  
255      between: 2 and 12,  
256      cost of consumption: 129  
257 PIPELINE 83,  
258      between: 58 and 51,  
259      cost of consumption: 810  
260 PIPELINE 84,  
261      between: 48 and 3,  
262      cost of consumption: 603  
263 PIPELINE 85,  
264      between: 23 and 11,  
265      cost of consumption: 122  
266 PIPELINE 86,  
267      between: 44 and 40,  
268      cost of consumption: 209  
269 PIPELINE 87,  
270      between: 39 and 46,  
271      cost of consumption: 171  
272 PIPELINE 88,  
273      between: 28 and 20,  
274      cost of consumption: 267  
275 PIPELINE 89,  
276      between: 63 and 40,  
277      cost of consumption: 802  
278 PIPELINE 90,  
279      between: 43 and 28,  
280      cost of consumption: 780  
281 PIPELINE 91,  
282      between: 55 and 51,  
283      cost of consumption: 941  
284 PIPELINE 92,  
285      between: 29 and 53,  
286      cost of consumption: 377  
287 PIPELINE 93,  
288      between: 25 and 47,  
289      cost of consumption: 444  
290 PIPELINE 94,  
291      between: 23 and 31,  
292      cost of consumption: 680  
293 PIPELINE 95,  
294      between: 21 and 55,  
295      cost of consumption: 491  
296 PIPELINE 96,  
297      between: 50 and 35,  
298      cost of consumption: 179  
299 PIPELINE 97,  
300      between: 6 and 11,  
301      cost of consumption: 233  
302 PIPELINE 98,  
303      between: 21 and 39,  
304      cost of consumption: 966  
305 PIPELINE 99,  
306      between: 35 and 38,  
307      cost of consumption: 334  
308 PIPELINE 100,  
309      between: 40 and 17,  
310      cost of consumption: 362  
311 PIPELINE 101,  
312      between: 23 and 8,  
313      cost of consumption: 278  
314 PIPELINE 102,  
315      between: 24 and 37,  
316      cost of consumption: 803  
317 PIPELINE 103,  
318      between: 36 and 63,  
319      cost of consumption: 643  
320 PIPELINE 104,  
321      between: 36 and 22,  
322      cost of consumption: 66  
323 PIPELINE 105,  
324      between: 39 and 43,  
325      cost of consumption: 785  
326 PIPELINE 106,  
327      between: 53 and 29,  
328      cost of consumption: 109
```

329 PIPELINE 107,  
330     between: 43 and 36,  
331     cost of consumption: 160  
332 PIPELINE 108,  
333     between: 15 and 57,  
334     cost of consumption: 367  
335 PIPELINE 109,  
336     between: 8 and 28,  
337     cost of consumption: 869  
338 PIPELINE 110,  
339     between: 41 and 4,  
340     cost of consumption: 510  
341 PIPELINE 111,  
342     between: 39 and 28,  
343     cost of consumption: 198  
344 PIPELINE 112,  
345     between: 24 and 52,  
346     cost of consumption: 827  
347 PIPELINE 113,  
348     between: 62 and 24,  
349     cost of consumption: 226  
350 PIPELINE 114,  
351     between: 20 and 60,  
352     cost of consumption: 200  
353 PIPELINE 115,  
354     between: 10 and 35,  
355     cost of consumption: 347  
356 PIPELINE 116,  
357     between: 54 and 24,  
358     cost of consumption: 489  
359 PIPELINE 117,  
360     between: 6 and 3,  
361     cost of consumption: 125  
362 PIPELINE 118,  
363     between: 33 and 19,  
364     cost of consumption: 478  
365 PIPELINE 119,  
366     between: 35 and 27,  
367     cost of consumption: 810  
368 PIPELINE 120,  
369     between: 11 and 5,  
370     cost of consumption: 566  
371 PIPELINE 121,  
372     between: 4 and 44,  
373     cost of consumption: 578  
374 PIPELINE 122,  
375     between: 5 and 4,  
376     cost of consumption: 430  
377 PIPELINE 123,  
378     between: 44 and 2,  
379     cost of consumption: 495  
380 PIPELINE 124,  
381     between: 17 and 23,  
382     cost of consumption: 267  
383 PIPELINE 125,  
384     between: 13 and 33,  
385     cost of consumption: 71  
386 PIPELINE 126,  
387     between: 51 and 23,  
388     cost of consumption: 743  
389 PIPELINE 127,  
390     between: 55 and 30,  
391     cost of consumption: 459  
392 PIPELINE 128,  
393     between: 31 and 63,  
394     cost of consumption: 446  
395 PIPELINE 129,  
396     between: 0 and 35,  
397     cost of consumption: 665  
398 PIPELINE 130,  
399     between: 61 and 46,  
400     cost of consumption: 150  
401 PIPELINE 131,  
402     between: 63 and 51,  
403     cost of consumption: 906  
404 PIPELINE 132,  
405     between: 28 and 56,  
406     cost of consumption: 558  
407 PIPELINE 133,  
408     between: 46 and 36,  
409     cost of consumption: 257  
410 PIPELINE 134,  
411     between: 24 and 54,  
412     cost of consumption: 288  
413 PIPELINE 135,  
414     between: 62 and 3,  
415     cost of consumption: 65  
416 PIPELINE 136,  
417     between: 8 and 54,  
418     cost of consumption: 72  
419 PIPELINE 137,  
420     between: 43 and 46,  
421     cost of consumption: 766  
422 PIPELINE 138,  
423     between: 17 and 13,  
424     cost of consumption: 950  
425 PIPELINE 139,  
426     between: 10 and 14,  
427     cost of consumption: 337  
428 PIPELINE 140,  
429     between: 30 and 11,  
430     cost of consumption: 791  
431 PIPELINE 141,  
432     between: 56 and 10,  
433     cost of consumption: 522  
434 PIPELINE 142,  
435     between: 61 and 39,  
436     cost of consumption: 723  
437 PIPELINE 143,  
438     between: 7 and 21

```

439     between: 1 and 21,
440     cost of consumption: 863
441 PIPELINE 144,
442     between: 19 and 45,
443     cost of consumption: 221
444 PIPELINE 145,
445     between: 54 and 43,
446     cost of consumption: 640
447 PIPELINE 146,
448     between: 58 and 52,
449     cost of consumption: 519
450 PIPELINE 147,
451     between: 21 and 31,
452     cost of consumption: 637
453 PIPELINE 148,
454     between: 15 and 48,
455     cost of consumption: 466
456 PIPELINE 149,
457     between: 8 and 58,
458     cost of consumption: 184
459 PIPELINE 150,
460     between: 36 and 24,
461     cost of consumption: 892
462 PIPELINE 151,
463     between: 46 and 16,
464     cost of consumption: 206
465 PIPELINE 152,
466     between: 44 and 14,
467     cost of consumption: 349
468 PIPELINE 153,
469     between: 34 and 21,
470     cost of consumption: 746
471 PIPELINE 154,
472     between: 60 and 40,
473     cost of consumption: 943
474 PIPELINE 155,
475     between: 13 and 30,
476     cost of consumption: 499
477 PIPELINE 156,
478     between: 32 and 24,
479     cost of consumption: 831
480 PIPELINE 157,
481     between: 42 and 45,
482     cost of consumption: 30
483 PIPELINE 158,
484     between: 34 and 60,
485     cost of consumption: 198
486 PIPELINE 159,
487     between: 40 and 4,
488     cost of consumption: 776
489 PIPELINE 160,
490     between: 59 and 40,
491     cost of consumption: 128
492 PIPELINE 161,
493     between: 26 and 23,
494     cost of consumption: 401
495 PIPELINE 162,
496     between: 4 and 3,
497     cost of consumption: 495
498 PIPELINE 163,
499     between: 20 and 37,
500     cost of consumption: 316
501 PIPELINE 164,
502     between: 58 and 33,
503     cost of consumption: 468
504 PIPELINE 165,
505     between: 12 and 46,
506     cost of consumption: 530
507 PIPELINE 166,
508     between: 10 and 15,
509     cost of consumption: 266
510 PIPELINE 167,
511     between: 60 and 57,
512     cost of consumption: 447
513 PIPELINE 168,
514     between: 13 and 28,
515     cost of consumption: 132
516 PIPELINE 169,
517     between: 14 and 4,
518     cost of consumption: 320
519 PIPELINE 170,
520     between: 9 and 63,
521     cost of consumption: 289
522 PIPELINE 171,
523     between: 29 and 26,
524     cost of consumption: 880
525 PIPELINE 172,
526     between: 1 and 30,
527     cost of consumption: 611
528 PIPELINE 173,
529     between: 51 and 50,
530     cost of consumption: 200
531 PIPELINE 174,
532     between: 58 and 44,
533     cost of consumption: 505
534 PIPELINE 175,
535     between: 41 and 57,
536     cost of consumption: 448
537 }
538 Number of Buildings:
539 64
540
541 Builded Pipelined Structure of the Algorithm:
542
543 Expected pipelined structure : 5, 28, 157, 57, 15, 25, 64, 135, 104, 74, 16, 125, 50, 136, 7, 13, 106, 85, 117, 160, 82, 19, 77, 39, 130, 1, 107, 87, 9
544
545 Returned pipelined structure :5, 28, 157, 57, 15, 25, 64, 135, 104, 74, 16, 125, 50, 136, 7, 13, 106, 85, 117, 160, 82, 19, 77, 39, 130, 1, 107, 87, 9
546
547 CASE 4-initial pipeline construction of the algorithm: [OK]

```

```
548
549
550
551 The new pipeline :
552 {
553     PIPELINE 176,
554     between: 27 and 26,
555     cost of consumption: 252
556 }
557
558 Expected updated pipelined structure : 5, 28, 157, 57, 15, 25, 64, 135, 104, 74, 16, 125, 50, 136, 7, 13, 106, 85, 117, 160, 82, 19, 77, 39, 130, 1, 107
559
560 Returned updated pipelined structure :5, 28, 157, 57, 15, 25, 64, 135, 104, 74, 16, 125, 50, 136, 7, 13, 106, 85, 117, 160, 82, 19, 77, 39, 130, 1, 107
561
562 CASE 4-updated pipeline construction of the algorithm: [OK]
563 -----
564 -----
565
```

testcase5.txt

```
1 ----- CASE 5 -----
2
3 CASE 5
4 -----
5
6 Given Pipelines:
7 {
8   PIPELINE 0,
9     between: 0 and 0,
10    cost of consumption: 916
11   PIPELINE 1,
12     between: 1 and 1,
13    cost of consumption: 566
14   PIPELINE 2,
15     between: 2 and 2,
16    cost of consumption: 782
17   PIPELINE 3,
18     between: 3 and 3,
19    cost of consumption: 903
20   PIPELINE 4,
21     between: 4 and 4,
22    cost of consumption: 385
23   PIPELINE 5,
24     between: 5 and 5,
25    cost of consumption: 998
26   PIPELINE 6,
27     between: 6 and 6,
28    cost of consumption: 889
29   PIPELINE 7,
30     between: 7 and 7,
31    cost of consumption: 700
32   PIPELINE 8,
33     between: 8 and 8,
34    cost of consumption: 104
35   PIPELINE 9,
36     between: 9 and 9,
37    cost of consumption: 201
38   PIPELINE 10,
39     between: 10 and 10,
40    cost of consumption: 834
41   PIPELINE 11,
42     between: 11 and 11,
43    cost of consumption: 735
44   PIPELINE 12,
45     between: 12 and 12,
46    cost of consumption: 391
47   PIPELINE 13,
48     between: 13 and 13,
49    cost of consumption: 397
50   PIPELINE 14,
51     between: 14 and 14,
52    cost of consumption: 376
53   PIPELINE 15,
54     between: 15 and 15,
55    cost of consumption: 684
56   PIPELINE 16,
57     between: 16 and 16,
58    cost of consumption: 698
59   PIPELINE 17,
60     between: 17 and 17,
61    cost of consumption: 918
62   PIPELINE 18,
63     between: 18 and 18,
64    cost of consumption: 606
65   PIPELINE 19,
66     between: 19 and 19,
67    cost of consumption: 773
68   PIPELINE 20,
69     between: 20 and 20,
70    cost of consumption: 490
71   PIPELINE 21,
72     between: 21 and 21,
73    cost of consumption: 947
74   PIPELINE 22,
75     between: 22 and 22,
76    cost of consumption: 438
77   PIPELINE 23,
78     between: 23 and 23,
79    cost of consumption: 855
80   PIPELINE 24,
81     between: 24 and 24,
82    cost of consumption: 541
83   PIPELINE 25,
84     between: 25 and 25,
85    cost of consumption: 39
86   PIPELINE 26,
87     between: 26 and 26,
88    cost of consumption: 958
89   PIPELINE 27,
90     between: 27 and 27,
91    cost of consumption: 823
92   PIPELINE 28,
93     between: 28 and 28,
94    cost of consumption: 615
95   PIPELINE 29,
96     between: 29 and 29,
97    cost of consumption: 547
98   PIPELINE 30,
99     between: 30 and 30,
100   cost of consumption: 999
101  PIPELINE 31,
102    between: 31 and 31,
103   cost of consumption: 526
104  PIPELINE 32,
105    between: 32 and 32,
106   cost of consumption: 109
107  PIPELINE 33,
108    between: 33 and 33,
109   cost of consumption: 776
110  PIPELINE 34
```

```
110 PIPELINE 34,  
111     between: 34 and 34,  
112     cost of consumption: 776  
113 PIPELINE 35,  
114     between: 35 and 35,  
115     cost of consumption: 841  
116 PIPELINE 36,  
117     between: 36 and 36,  
118     cost of consumption: 121  
119 PIPELINE 37,  
120     between: 37 and 37,  
121     cost of consumption: 12  
122 PIPELINE 38,  
123     between: 38 and 38,  
124     cost of consumption: 536  
125 PIPELINE 39,  
126     between: 39 and 39,  
127     cost of consumption: 221  
128 PIPELINE 40,  
129     between: 40 and 40,  
130     cost of consumption: 561  
131 PIPELINE 41,  
132     between: 41 and 41,  
133     cost of consumption: 717  
134 PIPELINE 42,  
135     between: 42 and 42,  
136     cost of consumption: 303  
137 PIPELINE 43,  
138     between: 43 and 43,  
139     cost of consumption: 947  
140 PIPELINE 44,  
141     between: 44 and 44,  
142     cost of consumption: 109  
143 PIPELINE 45,  
144     between: 45 and 45,  
145     cost of consumption: 674  
146 PIPELINE 46,  
147     between: 46 and 46,  
148     cost of consumption: 626  
149 PIPELINE 47,  
150     between: 47 and 47,  
151     cost of consumption: 154  
152 PIPELINE 48,  
153     between: 48 and 48,  
154     cost of consumption: 939  
155 PIPELINE 49,  
156     between: 49 and 49,  
157     cost of consumption: 580  
158 PIPELINE 50,  
159     between: 50 and 50,  
160     cost of consumption: 922  
161 PIPELINE 51,  
162     between: 51 and 51,  
163     cost of consumption: 424  
164 PIPELINE 52,  
165     between: 52 and 52,  
166     cost of consumption: 874  
167 PIPELINE 53,  
168     between: 53 and 53,  
169     cost of consumption: 355  
170 PIPELINE 54,  
171     between: 54 and 54,  
172     cost of consumption: 275  
173 PIPELINE 55,  
174     between: 55 and 55,  
175     cost of consumption: 410  
176 PIPELINE 56,  
177     between: 56 and 56,  
178     cost of consumption: 741  
179 PIPELINE 57,  
180     between: 57 and 57,  
181     cost of consumption: 580  
182 PIPELINE 58,  
183     between: 58 and 58,  
184     cost of consumption: 229  
185 PIPELINE 59,  
186     between: 59 and 59,  
187     cost of consumption: 351  
188 PIPELINE 60,  
189     between: 60 and 60,  
190     cost of consumption: 123  
191 PIPELINE 61,  
192     between: 61 and 61,  
193     cost of consumption: 223  
194 PIPELINE 62,  
195     between: 62 and 62,  
196     cost of consumption: 224  
197 PIPELINE 63,  
198     between: 63 and 63,  
199     cost of consumption: 579  
200 PIPELINE 64,  
201     between: 38 and 62,  
202     cost of consumption: 415  
203 PIPELINE 65,  
204     between: 10 and 38,  
205     cost of consumption: 298  
206 PIPELINE 66,  
207     between: 18 and 18,  
208     cost of consumption: 10  
209 PIPELINE 67,  
210     between: 44 and 48,  
211     cost of consumption: 466  
212 PIPELINE 68,  
213     between: 1 and 14,  
214     cost of consumption: 615  
215 PIPELINE 69,  
216     between: 24 and 13,  
217     cost of consumption: 884  
218 PIPELINE 70,  
219     between: 19 and 58.
```

```
--  
220      cost of consumption: 586  
221 PIPELINE 71,  
222      between: 41 and 16,  
223      cost of consumption: 323  
224 PIPELINE 72,  
225      between: 1 and 56,  
226      cost of consumption: 21  
227 PIPELINE 73,  
228      between: 7 and 18,  
229      cost of consumption: 241  
230 PIPELINE 74,  
231      between: 37 and 56,  
232      cost of consumption: 583  
233 PIPELINE 75,  
234      between: 63 and 3,  
235      cost of consumption: 933  
236 PIPELINE 76,  
237      between: 60 and 21,  
238      cost of consumption: 839  
239 PIPELINE 77,  
240      between: 9 and 2,  
241      cost of consumption: 688  
242 PIPELINE 78,  
243      between: 14 and 3,  
244      cost of consumption: 862  
245 PIPELINE 79,  
246      between: 40 and 27,  
247      cost of consumption: 611  
248 PIPELINE 80,  
249      between: 15 and 47,  
250      cost of consumption: 581  
251 PIPELINE 81,  
252      between: 12 and 24,  
253      cost of consumption: 957  
254 PIPELINE 82,  
255      between: 18 and 25,  
256      cost of consumption: 557  
257 PIPELINE 83,  
258      between: 27 and 32,  
259      cost of consumption: 728  
260 PIPELINE 84,  
261      between: 55 and 5,  
262      cost of consumption: 592  
263 PIPELINE 85,  
264      between: 17 and 4,  
265      cost of consumption: 915  
266 PIPELINE 86,  
267      between: 18 and 0,  
268      cost of consumption: 265  
269 PIPELINE 87,  
270      between: 36 and 9,  
271      cost of consumption: 291  
272 PIPELINE 88,  
273      between: 39 and 23,  
274      cost of consumption: 662  
275 PIPELINE 89,  
276      between: 56 and 63,  
277      cost of consumption: 314  
278 PIPELINE 90,  
279      between: 22 and 14,  
280      cost of consumption: 369  
281 PIPELINE 91,  
282      between: 47 and 27,  
283      cost of consumption: 97  
284 PIPELINE 92,  
285      between: 23 and 45,  
286      cost of consumption: 427  
287 PIPELINE 93,  
288      between: 56 and 8,  
289      cost of consumption: 827  
290 PIPELINE 94,  
291      between: 43 and 63,  
292      cost of consumption: 873  
293 PIPELINE 95,  
294      between: 22 and 17,  
295      cost of consumption: 325  
296 PIPELINE 96,  
297      between: 5 and 35,  
298      cost of consumption: 830  
299 PIPELINE 97,  
300      between: 9 and 7,  
301      cost of consumption: 39  
302 PIPELINE 98,  
303      between: 15 and 47,  
304      cost of consumption: 767  
305 PIPELINE 99,  
306      between: 24 and 39,  
307      cost of consumption: 622  
308 PIPELINE 100,  
309      between: 61 and 62,  
310      cost of consumption: 189  
311 PIPELINE 101,  
312      between: 17 and 45,  
313      cost of consumption: 48  
314 PIPELINE 102,  
315      between: 62 and 4,  
316      cost of consumption: 517  
317 PIPELINE 103,  
318      between: 4 and 60,  
319      cost of consumption: 614  
320 PIPELINE 104,  
321      between: 42 and 39,  
322      cost of consumption: 277  
323 PIPELINE 105,  
324      between: 22 and 62,  
325      cost of consumption: 382  
326 PIPELINE 106,  
327      between: 7 and 3,  
328      cost of consumption: 913
```

329 PIPELINE 107,  
330     between: 56 and 12,  
331     cost of consumption: 1001  
332 PIPELINE 108,  
333     between: 50 and 27,  
334     cost of consumption: 32  
335 PIPELINE 109,  
336     between: 4 and 51,  
337     cost of consumption: 863  
338 PIPELINE 110,  
339     between: 22 and 49,  
340     cost of consumption: 453  
341 PIPELINE 111,  
342     between: 54 and 2,  
343     cost of consumption: 730  
344 PIPELINE 112,  
345     between: 49 and 0,  
346     cost of consumption: 647  
347 PIPELINE 113,  
348     between: 25 and 4,  
349     cost of consumption: 403  
350 PIPELINE 114,  
351     between: 10 and 47,  
352     cost of consumption: 779  
353 PIPELINE 115,  
354     between: 59 and 5,  
355     cost of consumption: 657  
356 PIPELINE 116,  
357     between: 60 and 12,  
358     cost of consumption: 1004  
359 PIPELINE 117,  
360     between: 33 and 4,  
361     cost of consumption: 80  
362 PIPELINE 118,  
363     between: 13 and 55,  
364     cost of consumption: 819  
365 PIPELINE 119,  
366     between: 40 and 59,  
367     cost of consumption: 934  
368 PIPELINE 120,  
369     between: 42 and 17,  
370     cost of consumption: 31  
371 PIPELINE 121,  
372     between: 43 and 7,  
373     cost of consumption: 826  
374 PIPELINE 122,  
375     between: 24 and 56,  
376     cost of consumption: 114  
377 PIPELINE 123,  
378     between: 10 and 18,  
379     cost of consumption: 263  
380 PIPELINE 124,  
381     between: 57 and 28,  
382     cost of consumption: 502  
383 PIPELINE 125,  
384     between: 15 and 23,  
385     cost of consumption: 995  
386 PIPELINE 126,  
387     between: 35 and 20,  
388     cost of consumption: 768  
389 PIPELINE 127,  
390     between: 58 and 53,  
391     cost of consumption: 996  
392 PIPELINE 128,  
393     between: 29 and 2,  
394     cost of consumption: 363  
395 PIPELINE 129,  
396     between: 27 and 42,  
397     cost of consumption: 631  
398 PIPELINE 130,  
399     between: 12 and 20,  
400     cost of consumption: 768  
401 PIPELINE 131,  
402     between: 47 and 63,  
403     cost of consumption: 664  
404 PIPELINE 132,  
405     between: 20 and 24,  
406     cost of consumption: 656  
407 PIPELINE 133,  
408     between: 57 and 34,  
409     cost of consumption: 962  
410 PIPELINE 134,  
411     between: 35 and 27,  
412     cost of consumption: 191  
413 PIPELINE 135,  
414     between: 60 and 42,  
415     cost of consumption: 614  
416 PIPELINE 136,  
417     between: 27 and 13,  
418     cost of consumption: 962  
419 PIPELINE 137,  
420     between: 6 and 7,  
421     cost of consumption: 143  
422 PIPELINE 138,  
423     between: 53 and 36,  
424     cost of consumption: 153  
425 PIPELINE 139,  
426     between: 28 and 63,  
427     cost of consumption: 371  
428 PIPELINE 140,  
429     between: 62 and 12,  
430     cost of consumption: 8  
431 PIPELINE 141,  
432     between: 49 and 59,  
433     cost of consumption: 511  
434 PIPELINE 142,  
435     between: 44 and 15,  
436     cost of consumption: 959  
437 PIPELINE 143,  
438     between: 32 and 8

436       between: 34 and 0,  
437       cost of consumption: 994  
438 PIPELINE 144,  
439       between: 37 and 44,  
440       cost of consumption: 13  
441 PIPELINE 145,  
442       between: 7 and 40,  
443       cost of consumption: 144  
444 PIPELINE 146,  
445       between: 1 and 3,  
446       cost of consumption: 389  
447 PIPELINE 147,  
448       between: 14 and 9,  
449       cost of consumption: 397  
450 PIPELINE 148,  
451       between: 17 and 63,  
452       cost of consumption: 593  
453 PIPELINE 149,  
454       between: 21 and 27,  
455       cost of consumption: 793  
456 PIPELINE 150,  
457       between: 4 and 25,  
458       cost of consumption: 629  
459 PIPELINE 151,  
460       between: 7 and 10,  
461       cost of consumption: 424  
462 PIPELINE 152,  
463       between: 9 and 55,  
464       cost of consumption: 703  
465 PIPELINE 153,  
466       between: 36 and 23,  
467       cost of consumption: 927  
468 PIPELINE 154,  
469       between: 33 and 60,  
470       cost of consumption: 1003  
471 PIPELINE 155,  
472       between: 57 and 4,  
473       cost of consumption: 780  
474 PIPELINE 156,  
475       between: 60 and 5,  
476       cost of consumption: 599  
477 PIPELINE 157,  
478       between: 13 and 19,  
479       cost of consumption: 577  
480 PIPELINE 158,  
481       between: 37 and 36,  
482       cost of consumption: 352  
483 PIPELINE 159,  
484       between: 33 and 58,  
485       cost of consumption: 635  
486 PIPELINE 160,  
487       between: 29 and 62,  
488       cost of consumption: 52  
489 PIPELINE 161,  
490       between: 37 and 5,  
491       cost of consumption: 366  
492 PIPELINE 162,  
493       between: 40 and 14,  
494       cost of consumption: 589  
495 PIPELINE 163,  
496       between: 58 and 50,  
497       cost of consumption: 724  
498 PIPELINE 164,  
499       between: 21 and 19,  
500       cost of consumption: 729  
501 PIPELINE 165,  
502       between: 27 and 13,  
503       cost of consumption: 141  
504 PIPELINE 166,  
505       between: 10 and 9,  
506       cost of consumption: 922  
507 PIPELINE 167,  
508       between: 61 and 22,  
509       cost of consumption: 29  
510 PIPELINE 168,  
511       between: 57 and 59,  
512       cost of consumption: 602  
513 PIPELINE 169,  
514       between: 52 and 29,  
515       cost of consumption: 492  
516 PIPELINE 170,  
517       between: 10 and 58,  
518       cost of consumption: 66  
519 PIPELINE 171,  
520       between: 57 and 32,  
521       cost of consumption: 327  
522 PIPELINE 172,  
523       between: 50 and 8,  
524       cost of consumption: 837  
525 PIPELINE 173,  
526       between: 35 and 3,  
527       cost of consumption: 200  
528 PIPELINE 174,  
529       between: 42 and 24,  
530       cost of consumption: 107  
531 PIPELINE 175,  
532       between: 46 and 51,  
533       cost of consumption: 216  
534 PIPELINE 176,  
535       between: 54 and 62,  
536       cost of consumption: 722  
537 PIPELINE 177,  
538       between: 3 and 59,  
539       cost of consumption: 656  
540 PIPELINE 178,  
541       between: 36 and 52,  
542       cost of consumption: 764  
543 PIPELINE 179,  
544       between: 41 and 40,  
545       cost of consumption: 281  
546  
547

548 PIPELINE 180,  
549     between: 40 and 50,  
550     cost of consumption: 699  
551 PIPELINE 181,  
552     between: 37 and 43,  
553     cost of consumption: 291  
554 PIPELINE 182,  
555     between: 39 and 29,  
556     cost of consumption: 828  
557 PIPELINE 183,  
558     between: 55 and 0,  
559     cost of consumption: 711  
560 PIPELINE 184,  
561     between: 58 and 43,  
562     cost of consumption: 159  
563 PIPELINE 185,  
564     between: 17 and 25,  
565     cost of consumption: 226  
566 PIPELINE 186,  
567     between: 52 and 16,  
568     cost of consumption: 984  
569 PIPELINE 187,  
570     between: 33 and 19,  
571     cost of consumption: 83  
572 PIPELINE 188,  
573     between: 37 and 55,  
574     cost of consumption: 743  
575 PIPELINE 189,  
576     between: 36 and 32,  
577     cost of consumption: 311  
578 PIPELINE 190,  
579     between: 0 and 8,  
580     cost of consumption: 121  
581 PIPELINE 191,  
582     between: 22 and 45,  
583     cost of consumption: 868  
584 PIPELINE 192,  
585     between: 13 and 20,  
586     cost of consumption: 914  
587 PIPELINE 193,  
588     between: 12 and 12,  
589     cost of consumption: 898  
590 PIPELINE 194,  
591     between: 14 and 6,  
592     cost of consumption: 189  
593 PIPELINE 195,  
594     between: 40 and 23,  
595     cost of consumption: 863  
596 PIPELINE 196,  
597     between: 53 and 12,  
598     cost of consumption: 55  
599 PIPELINE 197,  
600     between: 1 and 45,  
601     cost of consumption: 34  
602 PIPELINE 198,  
603     between: 7 and 18,  
604     cost of consumption: 826  
605 PIPELINE 199,  
606     between: 2 and 54,  
607     cost of consumption: 26  
608 PIPELINE 200,  
609     between: 36 and 54,  
610     cost of consumption: 827  
611 PIPELINE 201,  
612     between: 57 and 13,  
613     cost of consumption: 936  
614 PIPELINE 202,  
615     between: 56 and 26,  
616     cost of consumption: 29  
617 PIPELINE 203,  
618     between: 21 and 38,  
619     cost of consumption: 289  
620 PIPELINE 204,  
621     between: 51 and 52,  
622     cost of consumption: 911  
623 PIPELINE 205,  
624     between: 59 and 28,  
625     cost of consumption: 999  
626 PIPELINE 206,  
627     between: 29 and 17,  
628     cost of consumption: 467  
629 PIPELINE 207,  
630     between: 15 and 18,  
631     cost of consumption: 32  
632 PIPELINE 208,  
633     between: 21 and 26,  
634     cost of consumption: 51  
635 PIPELINE 209,  
636     between: 18 and 28,  
637     cost of consumption: 929  
638 PIPELINE 210,  
639     between: 47 and 0,  
640     cost of consumption: 296  
641 PIPELINE 211,  
642     between: 21 and 57,  
643     cost of consumption: 845  
644 PIPELINE 212,  
645     between: 41 and 50,  
646     cost of consumption: 215  
647 PIPELINE 213,  
648     between: 17 and 7,  
649     cost of consumption: 229  
650 PIPELINE 214,  
651     between: 5 and 58,  
652     cost of consumption: 593  
653 PIPELINE 215,  
654     between: 63 and 54,  
655     cost of consumption: 813  
656 PIPELINE 216,

651        between: 1/ and 19,  
652        cost of consumption: 462  
653 PIPELINE 217,  
654        between: 47 and 35,  
655        cost of consumption: 817  
656 PIPELINE 218,  
657        between: 59 and 56,  
658        cost of consumption: 11  
659 PIPELINE 219,  
660        between: 25 and 10,  
661        cost of consumption: 431  
662 PIPELINE 220,  
663        between: 45 and 57,  
664        cost of consumption: 383  
665 PIPELINE 221,  
666        between: 56 and 15,  
667        cost of consumption: 337  
668 PIPELINE 222,  
669        between: 16 and 56,  
670        cost of consumption: 155  
671 PIPELINE 223,  
672        between: 2 and 9,  
673        cost of consumption: 98  
674 PIPELINE 224,  
675        between: 26 and 14,  
676        cost of consumption: 413  
677 PIPELINE 225,  
678        between: 38 and 13,  
679        cost of consumption: 283  
680 PIPELINE 226,  
681        between: 14 and 31,  
682        cost of consumption: 566  
683 PIPELINE 227,  
684        between: 8 and 14,  
685        cost of consumption: 665  
686 PIPELINE 228,  
687        between: 20 and 9,  
688        cost of consumption: 609  
689 PIPELINE 229,  
690        between: 58 and 34,  
691        cost of consumption: 219  
692 PIPELINE 230,  
693        between: 60 and 16,  
694        cost of consumption: 221  
695 PIPELINE 231,  
696        between: 62 and 8,  
697        cost of consumption: 84  
698 PIPELINE 232,  
699        between: 58 and 25,  
700        cost of consumption: 444  
701 PIPELINE 233,  
702        between: 40 and 27,  
703        cost of consumption: 325  
704 PIPELINE 234,  
705        between: 30 and 54,  
706        cost of consumption: 363  
707 PIPELINE 235,  
708        between: 14 and 28,  
709        cost of consumption: 112  
710 PIPELINE 236,  
711        between: 52 and 43,  
712        cost of consumption: 623  
713 PIPELINE 237,  
714        between: 45 and 51,  
715        cost of consumption: 654  
716 PIPELINE 238,  
717        between: 10 and 7,  
718        cost of consumption: 639  
719 PIPELINE 239,  
720        between: 30 and 1,  
721        cost of consumption: 570  
722 PIPELINE 240,  
723        between: 61 and 61,  
724        cost of consumption: 426  
725 PIPELINE 241,  
726        between: 21 and 59,  
727        cost of consumption: 146  
728 PIPELINE 242,  
729        between: 60 and 54,  
730        cost of consumption: 571  
731 PIPELINE 243,  
732        between: 27 and 30,  
733        cost of consumption: 615  
734 PIPELINE 244,  
735        between: 3 and 60,  
736        cost of consumption: 149  
737 PIPELINE 245,  
738        between: 57 and 10,  
739        cost of consumption: 113  
740 PIPELINE 246,  
741        between: 60 and 62,  
742        cost of consumption: 20  
743 PIPELINE 247,  
744        between: 31 and 44,  
745        cost of consumption: 623  
746 PIPELINE 248,  
747        between: 16 and 54,  
748        cost of consumption: 86  
749 PIPELINE 249,  
750        between: 10 and 20,  
751        cost of consumption: 119  
752 PIPELINE 250,  
753        between: 39 and 17,  
754        cost of consumption: 796  
755 PIPELINE 251,  
756        between: 20 and 38,  
757        cost of consumption: 848  
758 PIPELINE 252,  
759        between: 10 and 34,  
760        cost of consumption: 254  
761 PIPELINE 253,  
762        between: 10 and 34,  
763        cost of consumption: 254  
764 PIPELINE 254,  
765        between: 10 and 34,  
766        cost of consumption: 254

```
767     PIPELINE 253,  
768         between: 24 and 61,  
769         cost of consumption: 868  
770     PIPELINE 254,  
771         between: 2 and 0,  
772         cost of consumption: 433  
773     PIPELINE 255,  
774         between: 34 and 57,  
775         cost of consumption: 59  
776     PIPELINE 256,  
777         between: 31 and 54,  
778         cost of consumption: 26  
779     PIPELINE 257,  
780         between: 6 and 21,  
781         cost of consumption: 950  
782     PIPELINE 258,  
783         between: 33 and 37,  
784         cost of consumption: 436  
785     PIPELINE 259,  
786         between: 2 and 47,  
787         cost of consumption: 496  
788     PIPELINE 260,  
789         between: 37 and 23,  
790         cost of consumption: 642  
791     PIPELINE 261,  
792         between: 4 and 43,  
793         cost of consumption: 440  
794     PIPELINE 262,  
795         between: 31 and 53,  
796         cost of consumption: 971  
797     PIPELINE 263,  
798         between: 48 and 14,  
799         cost of consumption: 728  
800     PIPELINE 264,  
801         between: 32 and 16,  
802         cost of consumption: 329  
803     PIPELINE 265,  
804         between: 12 and 51,  
805         cost of consumption: 834  
806     PIPELINE 266,  
807         between: 2 and 18,  
808         cost of consumption: 704  
809     PIPELINE 267,  
810         between: 55 and 24,  
811         cost of consumption: 557  
812     PIPELINE 268,  
813         between: 24 and 57,  
814         cost of consumption: 394  
815     PIPELINE 269,  
816         between: 47 and 60,  
817         cost of consumption: 850  
818     PIPELINE 270,  
819         between: 27 and 33,  
820         cost of consumption: 489  
821     PIPELINE 271,  
822         between: 24 and 37,  
823         cost of consumption: 436  
824     PIPELINE 272,  
825         between: 59 and 5,  
826         cost of consumption: 834  
827     PIPELINE 273,  
828         between: 1 and 53,  
829         cost of consumption: 248  
830     PIPELINE 274,  
831         between: 5 and 21,  
832         cost of consumption: 992  
833     PIPELINE 275,  
834         between: 9 and 33,  
835         cost of consumption: 211  
836     PIPELINE 276,  
837         between: 6 and 36,  
838         cost of consumption: 13  
839     PIPELINE 277,  
840         between: 17 and 2,  
841         cost of consumption: 33  
842     PIPELINE 278,  
843         between: 10 and 48,  
844         cost of consumption: 536  
845     PIPELINE 279,  
846         between: 6 and 13,  
847         cost of consumption: 883  
848     PIPELINE 280,  
849         between: 39 and 1,  
850         cost of consumption: 515  
851     PIPELINE 281,  
852         between: 13 and 32,  
853         cost of consumption: 583  
854     PIPELINE 282,  
855         between: 18 and 53,  
856         cost of consumption: 320  
857     PIPELINE 283,  
858         between: 7 and 24,  
859         cost of consumption: 429  
860     PIPELINE 284,  
861         between: 29 and 12,  
862         cost of consumption: 214  
863     PIPELINE 285,  
864         between: 62 and 50,  
865         cost of consumption: 829  
866     PIPELINE 286,  
867         between: 34 and 43,  
868         cost of consumption: 847  
869     PIPELINE 287,  
870         between: 62 and 60,  
871         cost of consumption: 417  
872 }  
873 Number of Buildings:  
874 64  
875 --
```

```
876
877 Builded Pipelined Structure of the Algorithm:
878
879 Expected pipelined structure : 140, 66, 218, 37, 144, 276, 246, 72, 199, 256, 167, 202, 120, 108, 207, 277, 197, 25, 97, 101, 208, 160, 196, 255, 170,
880
881 Returned pipelined structure :140, 66, 218, 37, 144, 276, 246, 72, 199, 256, 167, 202, 120, 108, 207, 277, 197, 25, 97, 101, 208, 160, 196, 255, 170,
882
883 CASE 5-initial pipeline construction of the algorithm: [OK]
884
885
886
887 The new pipeline :
888 {
889   PIPELINE 288,
890     between: 21 and 20,
891     cost of consumption: 259
892 }
893
894 Expected updated pipelined structure : 140, 66, 218, 37, 144, 276, 246, 72, 199, 256, 167, 202, 120, 108, 207, 277, 197, 25, 97, 101, 208, 160, 196, 255,
895
896 Returned updated pipelined structure :140, 66, 218, 37, 144, 276, 246, 72, 199, 256, 167, 202, 120, 108, 207, 277, 197, 25, 97, 101, 208, 160, 196, 255
897
898 CASE 5-updated pipeline construction of the algorithm: [OK]
899 -----
900 -----
```

testcase6.txt

```
1 ----- CASE 6 -----
2
3 CASE 6
4 -----
5
6 Given Pipelines:
7 {
8   PIPELINE 0,
9     between: 0 and 0,
10    cost of consumption: 689
11  PIPELINE 1,
12    between: 1 and 1,
13    cost of consumption: 698
14  PIPELINE 2,
15    between: 2 and 2,
16    cost of consumption: 463
17  PIPELINE 3,
18    between: 3 and 3,
19    cost of consumption: 823
20  PIPELINE 4,
21    between: 4 and 4,
22    cost of consumption: 730
23  PIPELINE 5,
24    between: 5 and 5,
25    cost of consumption: 511
26  PIPELINE 6,
27    between: 6 and 6,
28    cost of consumption: 751
29  PIPELINE 7,
30    between: 7 and 7,
31    cost of consumption: 429
32  PIPELINE 8,
33    between: 8 and 8,
34    cost of consumption: 744
35  PIPELINE 9,
36    between: 9 and 9,
37    cost of consumption: 900
38  PIPELINE 10,
39    between: 10 and 10,
40    cost of consumption: 838
41  PIPELINE 11,
42    between: 11 and 11,
43    cost of consumption: 177
44  PIPELINE 12,
45    between: 12 and 12,
46    cost of consumption: 579
47  PIPELINE 13,
48    between: 13 and 13,
49    cost of consumption: 380
50  PIPELINE 14,
51    between: 14 and 14,
52    cost of consumption: 712
53  PIPELINE 15,
54    between: 15 and 15,
55    cost of consumption: 922
56  PIPELINE 16,
57    between: 16 and 16,
58    cost of consumption: 120
59  PIPELINE 17,
60    between: 17 and 17,
61    cost of consumption: 846
62  PIPELINE 18,
63    between: 18 and 18,
64    cost of consumption: 446
65  PIPELINE 19,
66    between: 19 and 19,
67    cost of consumption: 620
68  PIPELINE 20,
69    between: 20 and 20,
70    cost of consumption: 631
71  PIPELINE 21,
72    between: 21 and 21,
73    cost of consumption: 286
74  PIPELINE 22,
75    between: 22 and 22,
76    cost of consumption: 478
77  PIPELINE 23,
78    between: 23 and 23,
79    cost of consumption: 950
80  PIPELINE 24,
81    between: 24 and 24,
82    cost of consumption: 531
83  PIPELINE 25,
84    between: 25 and 25,
85    cost of consumption: 157
86  PIPELINE 26,
87    between: 26 and 26,
88    cost of consumption: 102
89  PIPELINE 27,
90    between: 27 and 27,
91    cost of consumption: 951
92  PIPELINE 28,
93    between: 28 and 28,
94    cost of consumption: 216
95  PIPELINE 29,
96    between: 29 and 29,
97    cost of consumption: 782
98  PIPELINE 30,
99    between: 30 and 30,
100   cost of consumption: 996
101  PIPELINE 31,
102    between: 31 and 31,
103    cost of consumption: 252
104  PIPELINE 32,
105    between: 32 and 32,
106    cost of consumption: 475
107  PIPELINE 33,
108    between: 33 and 33,
109    cost of consumption: 454
110  PIPELINE 34
```

110 PIPELINE 34,  
111     between: 34 and 34,  
112     cost of consumption: 422  
113 PIPELINE 35,  
114     between: 35 and 35,  
115     cost of consumption: 553  
116 PIPELINE 36,  
117     between: 36 and 36,  
118     cost of consumption: 312  
119 PIPELINE 37,  
120     between: 37 and 37,  
121     cost of consumption: 168  
122 PIPELINE 38,  
123     between: 38 and 38,  
124     cost of consumption: 329  
125 PIPELINE 39,  
126     between: 39 and 39,  
127     cost of consumption: 51  
128 PIPELINE 40,  
129     between: 40 and 40,  
130     cost of consumption: 415  
131 PIPELINE 41,  
132     between: 41 and 41,  
133     cost of consumption: 162  
134 PIPELINE 42,  
135     between: 42 and 42,  
136     cost of consumption: 576  
137 PIPELINE 43,  
138     between: 43 and 43,  
139     cost of consumption: 989  
140 PIPELINE 44,  
141     between: 44 and 44,  
142     cost of consumption: 537  
143 PIPELINE 45,  
144     between: 45 and 45,  
145     cost of consumption: 283  
146 PIPELINE 46,  
147     between: 46 and 46,  
148     cost of consumption: 258  
149 PIPELINE 47,  
150     between: 47 and 47,  
151     cost of consumption: 652  
152 PIPELINE 48,  
153     between: 48 and 48,  
154     cost of consumption: 476  
155 PIPELINE 49,  
156     between: 49 and 49,  
157     cost of consumption: 700  
158 PIPELINE 50,  
159     between: 50 and 50,  
160     cost of consumption: 619  
161 PIPELINE 51,  
162     between: 51 and 51,  
163     cost of consumption: 102  
164 PIPELINE 52,  
165     between: 52 and 52,  
166     cost of consumption: 333  
167 PIPELINE 53,  
168     between: 53 and 53,  
169     cost of consumption: 444  
170 PIPELINE 54,  
171     between: 54 and 54,  
172     cost of consumption: 48  
173 PIPELINE 55,  
174     between: 55 and 55,  
175     cost of consumption: 859  
176 PIPELINE 56,  
177     between: 56 and 56,  
178     cost of consumption: 948  
179 PIPELINE 57,  
180     between: 57 and 57,  
181     cost of consumption: 145  
182 PIPELINE 58,  
183     between: 58 and 58,  
184     cost of consumption: 805  
185 PIPELINE 59,  
186     between: 59 and 59,  
187     cost of consumption: 159  
188 PIPELINE 60,  
189     between: 60 and 60,  
190     cost of consumption: 274  
191 PIPELINE 61,  
192     between: 61 and 61,  
193     cost of consumption: 148  
194 PIPELINE 62,  
195     between: 62 and 62,  
196     cost of consumption: 758  
197 PIPELINE 63,  
198     between: 63 and 63,  
199     cost of consumption: 97  
200 PIPELINE 64,  
201     between: 64 and 64,  
202     cost of consumption: 597  
203 PIPELINE 65,  
204     between: 65 and 65,  
205     cost of consumption: 175  
206 PIPELINE 66,  
207     between: 66 and 66,  
208     cost of consumption: 645  
209 PIPELINE 67,  
210     between: 67 and 67,  
211     cost of consumption: 904  
212 PIPELINE 68,  
213     between: 68 and 68,  
214     cost of consumption: 691  
215 PIPELINE 69,  
216     between: 69 and 69,  
217     cost of consumption: 321  
218 PIPELINE 70,  
219     between: 70 and 70.

```
--      .. . . . .  
220      cost of consumption: 951  
221 PIPELINE 71,  
222      between: 71 and 71,  
223      cost of consumption: 101  
224 PIPELINE 72,  
225      between: 72 and 72,  
226      cost of consumption: 478  
227 PIPELINE 73,  
228      between: 73 and 73,  
229      cost of consumption: 522  
230 PIPELINE 74,  
231      between: 74 and 74,  
232      cost of consumption: 438  
233 PIPELINE 75,  
234      between: 75 and 75,  
235      cost of consumption: 362  
236 PIPELINE 76,  
237      between: 76 and 76,  
238      cost of consumption: 152  
239 PIPELINE 77,  
240      between: 77 and 77,  
241      cost of consumption: 43  
242 PIPELINE 78,  
243      between: 78 and 78,  
244      cost of consumption: 9  
245 PIPELINE 79,  
246      between: 79 and 79,  
247      cost of consumption: 975  
248 PIPELINE 80,  
249      between: 80 and 80,  
250      cost of consumption: 738  
251 PIPELINE 81,  
252      between: 81 and 81,  
253      cost of consumption: 624  
254 PIPELINE 82,  
255      between: 82 and 82,  
256      cost of consumption: 73  
257 PIPELINE 83,  
258      between: 83 and 83,  
259      cost of consumption: 418  
260 PIPELINE 84,  
261      between: 84 and 84,  
262      cost of consumption: 415  
263 PIPELINE 85,  
264      between: 85 and 85,  
265      cost of consumption: 468  
266 PIPELINE 86,  
267      between: 86 and 86,  
268      cost of consumption: 624  
269 PIPELINE 87,  
270      between: 87 and 87,  
271      cost of consumption: 359  
272 PIPELINE 88,  
273      between: 88 and 88,  
274      cost of consumption: 960  
275 PIPELINE 89,  
276      between: 89 and 89,  
277      cost of consumption: 776  
278 PIPELINE 90,  
279      between: 90 and 90,  
280      cost of consumption: 865  
281 PIPELINE 91,  
282      between: 91 and 91,  
283      cost of consumption: 230  
284 PIPELINE 92,  
285      between: 92 and 92,  
286      cost of consumption: 919  
287 PIPELINE 93,  
288      between: 93 and 93,  
289      cost of consumption: 619  
290 PIPELINE 94,  
291      between: 94 and 94,  
292      cost of consumption: 674  
293 PIPELINE 95,  
294      between: 95 and 95,  
295      cost of consumption: 511  
296 PIPELINE 96,  
297      between: 96 and 96,  
298      cost of consumption: 141  
299 PIPELINE 97,  
300      between: 97 and 97,  
301      cost of consumption: 666  
302 PIPELINE 98,  
303      between: 98 and 98,  
304      cost of consumption: 763  
305 PIPELINE 99,  
306      between: 99 and 99,  
307      cost of consumption: 827  
308 PIPELINE 100,  
309      between: 100 and 100,  
310      cost of consumption: 982  
311 PIPELINE 101,  
312      between: 101 and 101,  
313      cost of consumption: 61  
314 PIPELINE 102,  
315      between: 102 and 102,  
316      cost of consumption: 276  
317 PIPELINE 103,  
318      between: 103 and 103,  
319      cost of consumption: 455  
320 PIPELINE 104,  
321      between: 104 and 104,  
322      cost of consumption: 930  
323 PIPELINE 105,  
324      between: 105 and 105,  
325      cost of consumption: 709  
326 PIPELINE 106,  
327      between: 106 and 106,  
328      cost of consumption: 812
```

329 PIPELINE 107,  
330     between: 107 and 107,  
331     cost of consumption: 429  
332 PIPELINE 108,  
333     between: 108 and 108,  
334     cost of consumption: 747  
335 PIPELINE 109,  
336     between: 109 and 109,  
337     cost of consumption: 168  
338 PIPELINE 110,  
339     between: 110 and 110,  
340     cost of consumption: 399  
341 PIPELINE 111,  
342     between: 111 and 111,  
343     cost of consumption: 833  
344 PIPELINE 112,  
345     between: 112 and 112,  
346     cost of consumption: 139  
347 PIPELINE 113,  
348     between: 113 and 113,  
349     cost of consumption: 467  
350 PIPELINE 114,  
351     between: 114 and 114,  
352     cost of consumption: 598  
353 PIPELINE 115,  
354     between: 115 and 115,  
355     cost of consumption: 550  
356 PIPELINE 116,  
357     between: 116 and 116,  
358     cost of consumption: 282  
359 PIPELINE 117,  
360     between: 117 and 117,  
361     cost of consumption: 218  
362 PIPELINE 118,  
363     between: 118 and 118,  
364     cost of consumption: 904  
365 PIPELINE 119,  
366     between: 119 and 119,  
367     cost of consumption: 238  
368 PIPELINE 120,  
369     between: 120 and 120,  
370     cost of consumption: 341  
371 PIPELINE 121,  
372     between: 121 and 121,  
373     cost of consumption: 116  
374 PIPELINE 122,  
375     between: 122 and 122,  
376     cost of consumption: 815  
377 PIPELINE 123,  
378     between: 123 and 123,  
379     cost of consumption: 256  
380 PIPELINE 124,  
381     between: 124 and 124,  
382     cost of consumption: 730  
383 PIPELINE 125,  
384     between: 125 and 125,  
385     cost of consumption: 484  
386 PIPELINE 126,  
387     between: 126 and 126,  
388     cost of consumption: 114  
389 PIPELINE 127,  
390     between: 127 and 127,  
391     cost of consumption: 867  
392 PIPELINE 128,  
393     between: 20 and 115,  
394     cost of consumption: 41  
395 PIPELINE 129,  
396     between: 93 and 35,  
397     cost of consumption: 312  
398 PIPELINE 130,  
399     between: 87 and 32,  
400     cost of consumption: 368  
401 PIPELINE 131,  
402     between: 78 and 40,  
403     cost of consumption: 463  
404 PIPELINE 132,  
405     between: 1 and 107,  
406     cost of consumption: 291  
407 PIPELINE 133,  
408     between: 32 and 81,  
409     cost of consumption: 236  
410 PIPELINE 134,  
411     between: 25 and 127,  
412     cost of consumption: 801  
413 PIPELINE 135,  
414     between: 4 and 40,  
415     cost of consumption: 138  
416 PIPELINE 136,  
417     between: 43 and 90,  
418     cost of consumption: 741  
419 PIPELINE 137,  
420     between: 49 and 121,  
421     cost of consumption: 850  
422 PIPELINE 138,  
423     between: 119 and 13,  
424     cost of consumption: 70  
425 PIPELINE 139,  
426     between: 11 and 106,  
427     cost of consumption: 345  
428 PIPELINE 140,  
429     between: 39 and 65,  
430     cost of consumption: 898  
431 PIPELINE 141,  
432     between: 122 and 15,  
433     cost of consumption: 874  
434 PIPELINE 142,  
435     between: 28 and 16,  
436     cost of consumption: 245  
437 PIPELINE 143,  
438     between: 50 and 48

430        between: 30 and 40,  
431        cost of consumption: 431  
440 PIPELINE 144,  
441        between: 18 and 73,  
442        cost of consumption: 894  
443 PIPELINE 145,  
444        between: 126 and 77,  
445        cost of consumption: 942  
446 PIPELINE 146,  
447        between: 35 and 121,  
448        cost of consumption: 800  
449 PIPELINE 147,  
450        between: 115 and 42,  
451        cost of consumption: 137  
452 PIPELINE 148,  
453        between: 49 and 33,  
454        cost of consumption: 966  
455 PIPELINE 149,  
456        between: 98 and 44,  
457        cost of consumption: 616  
458 PIPELINE 150,  
459        between: 54 and 83,  
460        cost of consumption: 185  
461 PIPELINE 151,  
462        between: 43 and 78,  
463        cost of consumption: 536  
464 PIPELINE 152,  
465        between: 73 and 106,  
466        cost of consumption: 480  
467 PIPELINE 153,  
468        between: 81 and 29,  
469        cost of consumption: 505  
470 PIPELINE 154,  
471        between: 43 and 47,  
472        cost of consumption: 154  
473 PIPELINE 155,  
474        between: 4 and 45,  
475        cost of consumption: 32  
476 PIPELINE 156,  
477        between: 5 and 81,  
478        cost of consumption: 249  
479 PIPELINE 157,  
480        between: 96 and 68,  
481        cost of consumption: 531  
482 PIPELINE 158,  
483        between: 52 and 117,  
484        cost of consumption: 92  
485 PIPELINE 159,  
486        between: 21 and 87,  
487        cost of consumption: 968  
488 PIPELINE 160,  
489        between: 96 and 14,  
490        cost of consumption: 820  
491 PIPELINE 161,  
492        between: 108 and 57,  
493        cost of consumption: 10  
494 PIPELINE 162,  
495        between: 7 and 2,  
496        cost of consumption: 644  
497 PIPELINE 163,  
498        between: 51 and 84,  
499        cost of consumption: 713  
500 PIPELINE 164,  
501        between: 15 and 127,  
502        cost of consumption: 448  
503 PIPELINE 165,  
504        between: 52 and 4,  
505        cost of consumption: 646  
506 PIPELINE 166,  
507        between: 39 and 9,  
508        cost of consumption: 791  
509 PIPELINE 167,  
510        between: 19 and 106,  
511        cost of consumption: 619  
512 PIPELINE 168,  
513        between: 41 and 30,  
514        cost of consumption: 977  
515 PIPELINE 169,  
516        between: 96 and 52,  
517        cost of consumption: 632  
518 PIPELINE 170,  
519        between: 68 and 20,  
520        cost of consumption: 926  
521 PIPELINE 171,  
522        between: 123 and 1,  
523        cost of consumption: 752  
524 PIPELINE 172,  
525        between: 0 and 8,  
526        cost of consumption: 682  
527 PIPELINE 173,  
528        between: 111 and 59,  
529        cost of consumption: 958  
530 PIPELINE 174,  
531        between: 124 and 74,  
532        cost of consumption: 358  
533 PIPELINE 175,  
534        between: 55 and 127,  
535        cost of consumption: 770  
536 PIPELINE 176,  
537        between: 32 and 38,  
538        cost of consumption: 483  
539 PIPELINE 177,  
540        between: 90 and 58,  
541        cost of consumption: 293  
542 PIPELINE 178,  
543        between: 89 and 99,  
544        cost of consumption: 684  
545 PIPELINE 179,  
546        between: 77 and 68,  
547        cost of consumption: 616

548 PIPELINE 180,  
549     between: 24 and 8,  
550     cost of consumption: 700  
551 PIPELINE 181,  
552     between: 114 and 3,  
553     cost of consumption: 173  
554 PIPELINE 182,  
555     between: 5 and 3,  
556     cost of consumption: 862  
557 PIPELINE 183,  
558     between: 26 and 114,  
559     cost of consumption: 945  
560 PIPELINE 184,  
561     between: 4 and 110,  
562     cost of consumption: 572  
563 PIPELINE 185,  
564     between: 109 and 38,  
565     cost of consumption: 891  
566 PIPELINE 186,  
567     between: 90 and 70,  
568     cost of consumption: 985  
569 PIPELINE 187,  
570     between: 80 and 33,  
571     cost of consumption: 395  
572 PIPELINE 188,  
573     between: 49 and 122,  
574     cost of consumption: 999  
575 PIPELINE 189,  
576     between: 48 and 71,  
577     cost of consumption: 235  
578 PIPELINE 190,  
579     between: 99 and 95,  
580     cost of consumption: 771  
581 PIPELINE 191,  
582     between: 42 and 81,  
583     cost of consumption: 70  
584 PIPELINE 192,  
585     between: 115 and 86,  
586     cost of consumption: 489  
587 PIPELINE 193,  
588     between: 68 and 113,  
589     cost of consumption: 371  
590 PIPELINE 194,  
591     between: 80 and 117,  
592     cost of consumption: 722  
593 PIPELINE 195,  
594     between: 39 and 98,  
595     cost of consumption: 688  
596 PIPELINE 196,  
597     between: 125 and 60,  
598     cost of consumption: 910  
599 PIPELINE 197,  
600     between: 122 and 12,  
601     cost of consumption: 823  
602 PIPELINE 198,  
603     between: 48 and 61,  
604     cost of consumption: 745  
605 PIPELINE 199,  
606     between: 74 and 109,  
607     cost of consumption: 296  
608 PIPELINE 200,  
609     between: 40 and 80,  
610     cost of consumption: 456  
611 PIPELINE 201,  
612     between: 14 and 123,  
613     cost of consumption: 145  
614 PIPELINE 202,  
615     between: 119 and 110,  
616     cost of consumption: 464  
617 PIPELINE 203,  
618     between: 99 and 50,  
619     cost of consumption: 89  
620 PIPELINE 204,  
621     between: 66 and 2,  
622     cost of consumption: 974  
623 PIPELINE 205,  
624     between: 15 and 42,  
625     cost of consumption: 176  
626 PIPELINE 206,  
627     between: 2 and 39,  
628     cost of consumption: 108  
629 PIPELINE 207,  
630     between: 59 and 33,  
631     cost of consumption: 600  
632 PIPELINE 208,  
633     between: 22 and 82,  
634     cost of consumption: 294  
635 PIPELINE 209,  
636     between: 106 and 28,  
637     cost of consumption: 867  
638 PIPELINE 210,  
639     between: 6 and 69,  
640     cost of consumption: 932  
641 PIPELINE 211,  
642     between: 1 and 83,  
643     cost of consumption: 183  
644 PIPELINE 212,  
645     between: 77 and 75,  
646     cost of consumption: 141  
647 PIPELINE 213,  
648     between: 112 and 46,  
649     cost of consumption: 15  
650 PIPELINE 214,  
651     between: 4 and 112,  
652     cost of consumption: 393  
653 PIPELINE 215,  
654     between: 13 and 127,  
655     cost of consumption: 843  
656 PIPELINE 216,

551        between: 120 and 1,  
552        cost of consumption: 955  
553 PIPELINE 217,  
554        between: 31 and 61,  
555        cost of consumption: 708  
556 PIPELINE 218,  
557        between: 83 and 83,  
558        cost of consumption: 494  
559 PIPELINE 219,  
560        between: 68 and 61,  
561        cost of consumption: 307  
562 PIPELINE 220,  
563        between: 34 and 67,  
564        cost of consumption: 728  
565 PIPELINE 221,  
566        between: 81 and 68,  
567        cost of consumption: 171  
568 PIPELINE 222,  
569        between: 123 and 18,  
570        cost of consumption: 758  
571 PIPELINE 223,  
572        between: 19 and 2,  
573        cost of consumption: 621  
574 PIPELINE 224,  
575        between: 93 and 7,  
576        cost of consumption: 477  
577 PIPELINE 225,  
578        between: 42 and 20,  
579        cost of consumption: 397  
580 PIPELINE 226,  
581        between: 32 and 13,  
582        cost of consumption: 710  
583 PIPELINE 227,  
584        between: 62 and 44,  
585        cost of consumption: 27  
586 PIPELINE 228,  
587        between: 126 and 127,  
588        cost of consumption: 814  
589 PIPELINE 229,  
590        between: 15 and 67,  
591        cost of consumption: 516  
592 PIPELINE 230,  
593        between: 61 and 102,  
594        cost of consumption: 719  
595 PIPELINE 231,  
596        between: 48 and 55,  
597        cost of consumption: 932  
598 PIPELINE 232,  
599        between: 119 and 51,  
600        cost of consumption: 294  
601 PIPELINE 233,  
602        between: 8 and 70,  
603        cost of consumption: 264  
604 PIPELINE 234,  
605        between: 72 and 36,  
606        cost of consumption: 279  
607 PIPELINE 235,  
608        between: 121 and 78,  
609        cost of consumption: 660  
610 PIPELINE 236,  
611        between: 41 and 110,  
612        cost of consumption: 929  
613 PIPELINE 237,  
614        between: 90 and 45,  
615        cost of consumption: 837  
616 PIPELINE 238,  
617        between: 73 and 43,  
618        cost of consumption: 333  
619 PIPELINE 239,  
620        between: 10 and 58,  
621        cost of consumption: 408  
622 PIPELINE 240,  
623        between: 9 and 120,  
624        cost of consumption: 574  
625 PIPELINE 241,  
626        between: 76 and 40,  
627        cost of consumption: 462  
628 PIPELINE 242,  
629        between: 83 and 31,  
630        cost of consumption: 897  
631 PIPELINE 243,  
632        between: 108 and 40,  
633        cost of consumption: 71  
634 PIPELINE 244,  
635        between: 7 and 112,  
636        cost of consumption: 291  
637 PIPELINE 245,  
638        between: 42 and 105,  
639        cost of consumption: 649  
640 PIPELINE 246,  
641        between: 97 and 18,  
642        cost of consumption: 984  
643 PIPELINE 247,  
644        between: 37 and 109,  
645        cost of consumption: 597  
646 PIPELINE 248,  
647        between: 21 and 54,  
648        cost of consumption: 544  
649 PIPELINE 249,  
650        between: 5 and 64,  
651        cost of consumption: 314  
652 PIPELINE 250,  
653        between: 57 and 74,  
654        cost of consumption: 210  
655 PIPELINE 251,  
656        between: 82 and 22,  
657        cost of consumption: 955  
658 PIPELINE 252,  
659        between: 35 and 105,  
660        cost of consumption: 418

767 PIPELINE 253,  
768     between: 39 and 85,  
769     cost of consumption: 1002  
770 PIPELINE 254,  
771     between: 114 and 92,  
772     cost of consumption: 27  
773 PIPELINE 255,  
774     between: 96 and 6,  
775     cost of consumption: 964  
776 PIPELINE 256,  
777     between: 29 and 103,  
778     cost of consumption: 207  
779 PIPELINE 257,  
780     between: 72 and 12,  
781     cost of consumption: 812  
782 PIPELINE 258,  
783     between: 32 and 34,  
784     cost of consumption: 802  
785 PIPELINE 259,  
786     between: 35 and 39,  
787     cost of consumption: 338  
788 PIPELINE 260,  
789     between: 96 and 96,  
790     cost of consumption: 932  
791 PIPELINE 261,  
792     between: 22 and 51,  
793     cost of consumption: 650  
794 PIPELINE 262,  
795     between: 116 and 86,  
796     cost of consumption: 419  
797 PIPELINE 263,  
798     between: 113 and 126,  
799     cost of consumption: 232  
800 PIPELINE 264,  
801     between: 23 and 112,  
802     cost of consumption: 349  
803 PIPELINE 265,  
804     between: 45 and 80,  
805     cost of consumption: 395  
806 PIPELINE 266,  
807     between: 44 and 109,  
808     cost of consumption: 27  
809 PIPELINE 267,  
810     between: 62 and 53,  
811     cost of consumption: 871  
812 PIPELINE 268,  
813     between: 61 and 85,  
814     cost of consumption: 761  
815 PIPELINE 269,  
816     between: 114 and 120,  
817     cost of consumption: 673  
818 PIPELINE 270,  
819     between: 104 and 89,  
820     cost of consumption: 713  
821 PIPELINE 271,  
822     between: 39 and 111,  
823     cost of consumption: 156  
824 PIPELINE 272,  
825     between: 125 and 99,  
826     cost of consumption: 755  
827 PIPELINE 273,  
828     between: 59 and 84,  
829     cost of consumption: 105  
830 PIPELINE 274,  
831     between: 79 and 107,  
832     cost of consumption: 625  
833 PIPELINE 275,  
834     between: 63 and 24,  
835     cost of consumption: 601  
836 PIPELINE 276,  
837     between: 53 and 69,  
838     cost of consumption: 383  
839 PIPELINE 277,  
840     between: 19 and 3,  
841     cost of consumption: 596  
842 PIPELINE 278,  
843     between: 126 and 65,  
844     cost of consumption: 538  
845 PIPELINE 279,  
846     between: 10 and 51,  
847     cost of consumption: 98  
848 PIPELINE 280,  
849     between: 62 and 27,  
850     cost of consumption: 883  
851 PIPELINE 281,  
852     between: 83 and 67,  
853     cost of consumption: 802  
854 PIPELINE 282,  
855     between: 26 and 64,  
856     cost of consumption: 453  
857 PIPELINE 283,  
858     between: 56 and 123,  
859     cost of consumption: 954  
860 PIPELINE 284,  
861     between: 84 and 74,  
862     cost of consumption: 949  
863 PIPELINE 285,  
864     between: 96 and 9,  
865     cost of consumption: 814  
866 PIPELINE 286,  
867     between: 61 and 63,  
868     cost of consumption: 507  
869 PIPELINE 287,  
870     between: 7 and 82,  
871     cost of consumption: 582  
872 PIPELINE 288,  
873     between: 6 and 80,  
874     cost of consumption: 199  
875 PIPELINE 289,  
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876        between: 91 and 91,  
877        cost of consumption: 451  
878 PIPELINE 290,  
879        between: 41 and 25,  
880        cost of consumption: 726  
881 PIPELINE 291,  
882        between: 79 and 108,  
883        cost of consumption: 601  
884 PIPELINE 292,  
885        between: 101 and 7,  
886        cost of consumption: 721  
887 PIPELINE 293,  
888        between: 93 and 63,  
889        cost of consumption: 853  
890 PIPELINE 294,  
891        between: 42 and 20,  
892        cost of consumption: 575  
893 PIPELINE 295,  
894        between: 99 and 116,  
895        cost of consumption: 585  
896 PIPELINE 296,  
897        between: 52 and 49,  
898        cost of consumption: 920  
899 PIPELINE 297,  
900        between: 74 and 56,  
901        cost of consumption: 658  
902 PIPELINE 298,  
903        between: 99 and 63,  
904        cost of consumption: 963  
905 PIPELINE 299,  
906        between: 62 and 26,  
907        cost of consumption: 646  
908 PIPELINE 300,  
909        between: 76 and 67,  
910        cost of consumption: 671  
911 PIPELINE 301,  
912        between: 117 and 19,  
913        cost of consumption: 804  
914 PIPELINE 302,  
915        between: 98 and 120,  
916        cost of consumption: 843  
917 PIPELINE 303,  
918        between: 14 and 85,  
919        cost of consumption: 538  
920 PIPELINE 304,  
921        between: 54 and 0,  
922        cost of consumption: 342  
923 PIPELINE 305,  
924        between: 41 and 99,  
925        cost of consumption: 579  
926 PIPELINE 306,  
927        between: 37 and 23,  
928        cost of consumption: 492  
929 PIPELINE 307,  
930        between: 96 and 97,  
931        cost of consumption: 461  
932 PIPELINE 308,  
933        between: 109 and 68,  
934        cost of consumption: 132  
935 PIPELINE 309,  
936        between: 75 and 2,  
937        cost of consumption: 686  
938 PIPELINE 310,  
939        between: 4 and 78,  
940        cost of consumption: 570  
941 PIPELINE 311,  
942        between: 87 and 68,  
943        cost of consumption: 661  
944 PIPELINE 312,  
945        between: 22 and 38,  
946        cost of consumption: 109  
947 PIPELINE 313,  
948        between: 92 and 52,  
949        cost of consumption: 66  
950 PIPELINE 314,  
951        between: 97 and 107,  
952        cost of consumption: 778  
953 PIPELINE 315,  
954        between: 123 and 20,  
955        cost of consumption: 893  
956 PIPELINE 316,  
957        between: 9 and 57,  
958        cost of consumption: 220  
959 PIPELINE 317,  
960        between: 72 and 25,  
961        cost of consumption: 261  
962 PIPELINE 318,  
963        between: 64 and 6,  
964        cost of consumption: 946  
965 PIPELINE 319,  
966        between: 119 and 82,  
967        cost of consumption: 468  
968 PIPELINE 320,  
969        between: 73 and 86,  
970        cost of consumption: 275  
971 PIPELINE 321,  
972        between: 94 and 45,  
973        cost of consumption: 143  
974 PIPELINE 322,  
975        between: 6 and 67,  
976        cost of consumption: 965  
977 PIPELINE 323,  
978        between: 38 and 31,  
979        cost of consumption: 161  
980 PIPELINE 324,  
981        between: 27 and 1,  
982        cost of consumption: 932  
983 PIPELINE 325,  
984        between: 17 and 124,  
985        cost of consumption: 496

985       cost of consumption: 495  
986 PIPELINE 326,  
987       between: 105 and 5,  
988       cost of consumption: 489  
989 PIPELINE 327,  
990       between: 89 and 77,  
991       cost of consumption: 826  
992 PIPELINE 328,  
993       between: 41 and 14,  
994       cost of consumption: 809  
995 PIPELINE 329,  
996       between: 62 and 5,  
997       cost of consumption: 451  
998 PIPELINE 330,  
999       between: 86 and 78,  
1000      cost of consumption: 689  
1001 PIPELINE 331,  
1002      between: 60 and 44,  
1003      cost of consumption: 247  
1004 PIPELINE 332,  
1005      between: 102 and 50,  
1006      cost of consumption: 570  
1007 PIPELINE 333,  
1008      between: 54 and 88,  
1009      cost of consumption: 850  
1010 PIPELINE 334,  
1011      between: 58 and 116,  
1012      cost of consumption: 619  
1013 PIPELINE 335,  
1014      between: 42 and 5,  
1015      cost of consumption: 919  
1016 PIPELINE 336,  
1017      between: 45 and 110,  
1018      cost of consumption: 620  
1019 PIPELINE 337,  
1020      between: 106 and 71,  
1021      cost of consumption: 913  
1022 PIPELINE 338,  
1023      between: 63 and 113,  
1024      cost of consumption: 607  
1025 PIPELINE 339,  
1026      between: 27 and 47,  
1027      cost of consumption: 477  
1028 PIPELINE 340,  
1029      between: 73 and 5,  
1030      cost of consumption: 555  
1031 PIPELINE 341,  
1032      between: 78 and 65,  
1033      cost of consumption: 760  
1034 PIPELINE 342,  
1035      between: 0 and 39,  
1036      cost of consumption: 746  
1037 PIPELINE 343,  
1038      between: 117 and 93,  
1039      cost of consumption: 971  
1040 PIPELINE 344,  
1041      between: 10 and 24,  
1042      cost of consumption: 495  
1043 PIPELINE 345,  
1044      between: 32 and 66,  
1045      cost of consumption: 444  
1046 PIPELINE 346,  
1047      between: 50 and 111,  
1048      cost of consumption: 706  
1049 PIPELINE 347,  
1050      between: 73 and 89,  
1051      cost of consumption: 498  
1052 PIPELINE 348,  
1053      between: 46 and 25,  
1054      cost of consumption: 427  
1055 PIPELINE 349,  
1056      between: 32 and 52,  
1057      cost of consumption: 434  
1058 PIPELINE 350,  
1059      between: 24 and 126,  
1060      cost of consumption: 984  
1061 PIPELINE 351,  
1062      between: 95 and 76,  
1063      cost of consumption: 697  
1064 PIPELINE 352,  
1065      between: 82 and 76,  
1066      cost of consumption: 361  
1067 PIPELINE 353,  
1068      between: 119 and 65,  
1069      cost of consumption: 638  
1070 PIPELINE 354,  
1071      between: 117 and 76,  
1072      cost of consumption: 686  
1073 PIPELINE 355,  
1074      between: 103 and 108,  
1075      cost of consumption: 432  
1076 PIPELINE 356,  
1077      between: 94 and 31,  
1078      cost of consumption: 720  
1079 PIPELINE 357,  
1080      between: 68 and 104,  
1081      cost of consumption: 33  
1082 PIPELINE 358,  
1083      between: 113 and 22,  
1084      cost of consumption: 546  
1085 PIPELINE 359,  
1086      between: 15 and 55,  
1087      cost of consumption: 711  
1088 PIPELINE 360,  
1089      between: 92 and 79,  
1090      cost of consumption: 677  
1091 PIPELINE 361,  
1092      between: 47 and 46,  
1093      cost of consumption: 777  
1094 PIPELINE 362,

1095        between: 68 and 0,  
1096        cost of consumption: 957  
1097 PIPELINE 363,  
1098        between: 0 and 120,  
1099        cost of consumption: 134  
1100 PIPELINE 364,  
1101        between: 25 and 109,  
1102        cost of consumption: 506  
1103 PIPELINE 365,  
1104        between: 75 and 85,  
1105        cost of consumption: 687  
1106 PIPELINE 366,  
1107        between: 62 and 51,  
1108        cost of consumption: 942  
1109 PIPELINE 367,  
1110        between: 33 and 119,  
1111        cost of consumption: 886  
1112 PIPELINE 368,  
1113        between: 94 and 104,  
1114        cost of consumption: 781  
1115 PIPELINE 369,  
1116        between: 51 and 119,  
1117        cost of consumption: 228  
1118 PIPELINE 370,  
1119        between: 61 and 84,  
1120        cost of consumption: 51  
1121 PIPELINE 371,  
1122        between: 69 and 3,  
1123        cost of consumption: 154  
1124 PIPELINE 372,  
1125        between: 25 and 71,  
1126        cost of consumption: 938  
1127 PIPELINE 373,  
1128        between: 57 and 71,  
1129        cost of consumption: 202  
1130 PIPELINE 374,  
1131        between: 27 and 97,  
1132        cost of consumption: 560  
1133 PIPELINE 375,  
1134        between: 72 and 44,  
1135        cost of consumption: 501  
1136 PIPELINE 376,  
1137        between: 98 and 106,  
1138        cost of consumption: 168  
1139 PIPELINE 377,  
1140        between: 27 and 12,  
1141        cost of consumption: 264  
1142 PIPELINE 378,  
1143        between: 61 and 106,  
1144        cost of consumption: 928  
1145 PIPELINE 379,  
1146        between: 117 and 29,  
1147        cost of consumption: 288  
1148 PIPELINE 380,  
1149        between: 100 and 91,  
1150        cost of consumption: 772  
1151 PIPELINE 381,  
1152        between: 34 and 32,  
1153        cost of consumption: 711  
1154 PIPELINE 382,  
1155        between: 15 and 58,  
1156        cost of consumption: 799  
1157 PIPELINE 383,  
1158        between: 125 and 115,  
1159        cost of consumption: 742  
1160 PIPELINE 384,  
1161        between: 98 and 14,  
1162        cost of consumption: 527  
1163 PIPELINE 385,  
1164        between: 53 and 87,  
1165        cost of consumption: 835  
1166 PIPELINE 386,  
1167        between: 93 and 57,  
1168        cost of consumption: 446  
1169 PIPELINE 387,  
1170        between: 57 and 85,  
1171        cost of consumption: 426  
1172 PIPELINE 388,  
1173        between: 12 and 18,  
1174        cost of consumption: 452  
1175 PIPELINE 389,  
1176        between: 71 and 7,  
1177        cost of consumption: 769  
1178 PIPELINE 390,  
1179        between: 122 and 107,  
1180        cost of consumption: 732  
1181 PIPELINE 391,  
1182        between: 1 and 13,  
1183        cost of consumption: 69  
1184 PIPELINE 392,  
1185        between: 12 and 29,  
1186        cost of consumption: 847  
1187 PIPELINE 393,  
1188        between: 94 and 26,  
1189        cost of consumption: 722  
1190 PIPELINE 394,  
1191        between: 119 and 124,  
1192        cost of consumption: 177  
1193 PIPELINE 395,  
1194        between: 114 and 50,  
1195        cost of consumption: 712  
1196 PIPELINE 396,  
1197        between: 24 and 15,  
1198        cost of consumption: 9  
1199 PIPELINE 397,  
1200        between: 41 and 72,  
1201        cost of consumption: 358  
1202 PIPELINE 398,  
1203        between: 70 and 84,  
1204        cost of consumption: 997

1204       COST OF CONSUMPTION: 992  
1205 PIPELINE 399,  
1206       between: 77 and 28,  
1207       cost of consumption: 983  
1208 PIPELINE 400,  
1209       between: 114 and 22,  
1210       cost of consumption: 610  
1211 PIPELINE 401,  
1212       between: 113 and 24,  
1213       cost of consumption: 568  
1214 PIPELINE 402,  
1215       between: 17 and 36,  
1216       cost of consumption: 709  
1217 PIPELINE 403,  
1218       between: 107 and 2,  
1219       cost of consumption: 615  
1220 PIPELINE 404,  
1221       between: 57 and 121,  
1222       cost of consumption: 187  
1223 PIPELINE 405,  
1224       between: 21 and 107,  
1225       cost of consumption: 629  
1226 PIPELINE 406,  
1227       between: 72 and 4,  
1228       cost of consumption: 789  
1229 PIPELINE 407,  
1230       between: 52 and 45,  
1231       cost of consumption: 181  
1232 PIPELINE 408,  
1233       between: 118 and 116,  
1234       cost of consumption: 66  
1235 PIPELINE 409,  
1236       between: 73 and 65,  
1237       cost of consumption: 366  
1238 PIPELINE 410,  
1239       between: 36 and 51,  
1240       cost of consumption: 364  
1241 PIPELINE 411,  
1242       between: 105 and 37,  
1243       cost of consumption: 180  
1244 PIPELINE 412,  
1245       between: 60 and 54,  
1246       cost of consumption: 872  
1247 PIPELINE 413,  
1248       between: 44 and 34,  
1249       cost of consumption: 234  
1250 PIPELINE 414,  
1251       between: 54 and 91,  
1252       cost of consumption: 356  
1253 PIPELINE 415,  
1254       between: 61 and 112,  
1255       cost of consumption: 759  
1256 PIPELINE 416,  
1257       between: 117 and 56,  
1258       cost of consumption: 979  
1259 PIPELINE 417,  
1260       between: 61 and 108,  
1261       cost of consumption: 457  
1262 PIPELINE 418,  
1263       between: 78 and 98,  
1264       cost of consumption: 965  
1265 PIPELINE 419,  
1266       between: 51 and 44,  
1267       cost of consumption: 598  
1268 PIPELINE 420,  
1269       between: 52 and 80,  
1270       cost of consumption: 474  
1271 PIPELINE 421,  
1272       between: 75 and 57,  
1273       cost of consumption: 671  
1274 PIPELINE 422,  
1275       between: 123 and 118,  
1276       cost of consumption: 253  
1277 PIPELINE 423,  
1278       between: 78 and 34,  
1279       cost of consumption: 711  
1280 PIPELINE 424,  
1281       between: 36 and 89,  
1282       cost of consumption: 466  
1283 PIPELINE 425,  
1284       between: 115 and 22,  
1285       cost of consumption: 690  
1286 PIPELINE 426,  
1287       between: 45 and 11,  
1288       cost of consumption: 738  
1289 PIPELINE 427,  
1290       between: 108 and 73,  
1291       cost of consumption: 615  
1292 PIPELINE 428,  
1293       between: 88 and 23,  
1294       cost of consumption: 729  
1295 PIPELINE 429,  
1296       between: 56 and 74,  
1297       cost of consumption: 717  
1298 PIPELINE 430,  
1299       between: 89 and 126,  
1300       cost of consumption: 909  
1301 PIPELINE 431,  
1302       between: 46 and 73,  
1303       cost of consumption: 559  
1304 PIPELINE 432,  
1305       between: 40 and 68,  
1306       cost of consumption: 933  
1307 PIPELINE 433,  
1308       between: 89 and 19,  
1309       cost of consumption: 31  
1310 PIPELINE 434,  
1311       between: 43 and 55,  
1312       cost of consumption: 520  
1313 PIPELINE 435,

1314        between: 89 and 42,  
1315        cost of consumption: 582  
1316 PIPELINE 436,  
1317        between: 118 and 87,  
1318        cost of consumption: 490  
1319 PIPELINE 437,  
1320        between: 76 and 67,  
1321        cost of consumption: 731  
1322 PIPELINE 438,  
1323        between: 14 and 27,  
1324        cost of consumption: 834  
1325 PIPELINE 439,  
1326        between: 50 and 83,  
1327        cost of consumption: 156  
1328 PIPELINE 440,  
1329        between: 3 and 45,  
1330        cost of consumption: 762  
1331 PIPELINE 441,  
1332        between: 35 and 91,  
1333        cost of consumption: 659  
1334 PIPELINE 442,  
1335        between: 125 and 4,  
1336        cost of consumption: 728  
1337 PIPELINE 443,  
1338        between: 77 and 93,  
1339        cost of consumption: 835  
1340 PIPELINE 444,  
1341        between: 64 and 8,  
1342        cost of consumption: 210  
1343 PIPELINE 445,  
1344        between: 11 and 97,  
1345        cost of consumption: 204  
1346 PIPELINE 446,  
1347        between: 109 and 88,  
1348        cost of consumption: 923  
1349 PIPELINE 447,  
1350        between: 90 and 36,  
1351        cost of consumption: 695  
1352 PIPELINE 448,  
1353        between: 16 and 50,  
1354        cost of consumption: 970  
1355 PIPELINE 449,  
1356        between: 93 and 100,  
1357        cost of consumption: 62  
1358 PIPELINE 450,  
1359        between: 116 and 103,  
1360        cost of consumption: 211  
1361 PIPELINE 451,  
1362        between: 9 and 11,  
1363        cost of consumption: 238  
1364 PIPELINE 452,  
1365        between: 103 and 8,  
1366        cost of consumption: 810  
1367 PIPELINE 453,  
1368        between: 10 and 86,  
1369        cost of consumption: 527  
1370 PIPELINE 454,  
1371        between: 64 and 22,  
1372        cost of consumption: 96  
1373 PIPELINE 455,  
1374        between: 45 and 33,  
1375        cost of consumption: 977  
1376 PIPELINE 456,  
1377        between: 68 and 14,  
1378        cost of consumption: 913  
1379 PIPELINE 457,  
1380        between: 51 and 104,  
1381        cost of consumption: 581  
1382 PIPELINE 458,  
1383        between: 101 and 120,  
1384        cost of consumption: 647  
1385 PIPELINE 459,  
1386        between: 50 and 85,  
1387        cost of consumption: 836  
1388 PIPELINE 460,  
1389        between: 83 and 73,  
1390        cost of consumption: 211  
1391 PIPELINE 461,  
1392        between: 33 and 82,  
1393        cost of consumption: 678  
1394 PIPELINE 462,  
1395        between: 75 and 58,  
1396        cost of consumption: 495  
1397 PIPELINE 463,  
1398        between: 120 and 68,  
1399        cost of consumption: 885  
1400 PIPELINE 464,  
1401        between: 3 and 5,  
1402        cost of consumption: 579  
1403 PIPELINE 465,  
1404        between: 22 and 50,  
1405        cost of consumption: 444  
1406 PIPELINE 466,  
1407        between: 10 and 119,  
1408        cost of consumption: 707  
1409 PIPELINE 467,  
1410        between: 87 and 42,  
1411        cost of consumption: 203  
1412 PIPELINE 468,  
1413        between: 71 and 15,  
1414        cost of consumption: 364  
1415 PIPELINE 469,  
1416        between: 106 and 65,  
1417        cost of consumption: 313  
1418 PIPELINE 470,  
1419        between: 113 and 21,  
1420        cost of consumption: 259  
1421 PIPELINE 471,  
1422        between: 95 and 54,

1423       cost of consumption: 605  
1424 PIPELINE 472,  
1425       between: 89 and 1,  
1426       cost of consumption: 359  
1427 PIPELINE 473,  
1428       between: 91 and 122,  
1429       cost of consumption: 596  
1430 PIPELINE 474,  
1431       between: 51 and 125,  
1432       cost of consumption: 145  
1433 PIPELINE 475,  
1434       between: 33 and 19,  
1435       cost of consumption: 211  
1436 PIPELINE 476,  
1437       between: 48 and 29,  
1438       cost of consumption: 994  
1439 PIPELINE 477,  
1440       between: 78 and 116,  
1441       cost of consumption: 764  
1442 PIPELINE 478,  
1443       between: 85 and 60,  
1444       cost of consumption: 563  
1445 PIPELINE 479,  
1446       between: 84 and 38,  
1447       cost of consumption: 709  
1448 PIPELINE 480,  
1449       between: 40 and 23,  
1450       cost of consumption: 258  
1451 PIPELINE 481,  
1452       between: 70 and 118,  
1453       cost of consumption: 416  
1454 PIPELINE 482,  
1455       between: 55 and 79,  
1456       cost of consumption: 770  
1457 PIPELINE 483,  
1458       between: 97 and 42,  
1459       cost of consumption: 476  
1460 PIPELINE 484,  
1461       between: 80 and 93,  
1462       cost of consumption: 705  
1463 PIPELINE 485,  
1464       between: 68 and 126,  
1465       cost of consumption: 900  
1466 PIPELINE 486,  
1467       between: 107 and 47,  
1468       cost of consumption: 737  
1469 PIPELINE 487,  
1470       between: 8 and 125,  
1471       cost of consumption: 422  
1472 PIPELINE 488,  
1473       between: 80 and 82,  
1474       cost of consumption: 234  
1475 PIPELINE 489,  
1476       between: 38 and 38,  
1477       cost of consumption: 816  
1478 PIPELINE 490,  
1479       between: 62 and 79,  
1480       cost of consumption: 351  
1481 PIPELINE 491,  
1482       between: 107 and 21,  
1483       cost of consumption: 45  
1484 PIPELINE 492,  
1485       between: 79 and 76,  
1486       cost of consumption: 925  
1487 PIPELINE 493,  
1488       between: 52 and 46,  
1489       cost of consumption: 479  
1490 PIPELINE 494,  
1491       between: 19 and 126,  
1492       cost of consumption: 941  
1493 PIPELINE 495,  
1494       between: 111 and 67,  
1495       cost of consumption: 883  
1496 PIPELINE 496,  
1497       between: 94 and 46,  
1498       cost of consumption: 450  
1499 PIPELINE 497,  
1500       between: 106 and 54,  
1501       cost of consumption: 992  
1502 PIPELINE 498,  
1503       between: 107 and 6,  
1504       cost of consumption: 58  
1505 PIPELINE 499,  
1506       between: 40 and 45,  
1507       cost of consumption: 9  
1508 PIPELINE 500,  
1509       between: 11 and 107,  
1510       cost of consumption: 856  
1511 PIPELINE 501,  
1512       between: 5 and 87,  
1513       cost of consumption: 501  
1514 PIPELINE 502,  
1515       between: 118 and 38,  
1516       cost of consumption: 546  
1517 PIPELINE 503,  
1518       between: 54 and 90,  
1519       cost of consumption: 48  
1520 PIPELINE 504,  
1521       between: 32 and 109,  
1522       cost of consumption: 598  
1523 PIPELINE 505,  
1524       between: 104 and 92,  
1525       cost of consumption: 689  
1526 PIPELINE 506,  
1527       between: 47 and 58,  
1528       cost of consumption: 823  
1529 PIPELINE 507,  
1530       between: 36 and 36,  
1531       cost of consumption: 694  
1532 PTPFLTNF 508.

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1533     between: 23 and 16,
1534     cost of consumption: 60
1535 PIPELINE 509,
1536     between: 93 and 56,
1537     cost of consumption: 481
1538 PIPELINE 510,
1539     between: 73 and 68,
1540     cost of consumption: 365
1541 PIPELINE 511,
1542     between: 4 and 73,
1543     cost of consumption: 612
1544 PIPELINE 512,
1545     between: 84 and 63,
1546     cost of consumption: 986
1547 PIPELINE 513,
1548     between: 113 and 117,
1549     cost of consumption: 252
1550 PIPELINE 514,
1551     between: 60 and 22,
1552     cost of consumption: 585
1553 PIPELINE 515,
1554     between: 6 and 126,
1555     cost of consumption: 333
1556 PIPELINE 516,
1557     between: 18 and 45,
1558     cost of consumption: 95
1559 PIPELINE 517,
1560     between: 77 and 82,
1561     cost of consumption: 251
1562 PIPELINE 518,
1563     between: 62 and 105,
1564     cost of consumption: 923
1565 PIPELINE 519,
1566     between: 53 and 70,
1567     cost of consumption: 340
1568 PIPELINE 520,
1569     between: 90 and 15,
1570     cost of consumption: 664
1571 PIPELINE 521,
1572     between: 106 and 19,
1573     cost of consumption: 593
1574 PIPELINE 522,
1575     between: 81 and 104,
1576     cost of consumption: 169
1577 PIPELINE 523,
1578     between: 94 and 89,
1579     cost of consumption: 310
1580 PIPELINE 524,
1581     between: 69 and 22,
1582     cost of consumption: 844
1583 PIPELINE 525,
1584     between: 25 and 28,
1585     cost of consumption: 355
1586 PIPELINE 526,
1587     between: 73 and 46,
1588     cost of consumption: 720
1589 PIPELINE 527,
1590     between: 51 and 123,
1591     cost of consumption: 90
1592 PIPELINE 528,
1593     between: 65 and 57,
1594     cost of consumption: 452
1595 PIPELINE 529,
1596     between: 96 and 111,
1597     cost of consumption: 506
1598 PIPELINE 530,
1599     between: 55 and 73,
1600     cost of consumption: 962
1601 PIPELINE 531,
1602     between: 82 and 51,
1603     cost of consumption: 317
1604 PIPELINE 532,
1605     between: 54 and 4,
1606     cost of consumption: 421
1607 PIPELINE 533,
1608     between: 90 and 98,
1609     cost of consumption: 167
1610 PIPELINE 534,
1611     between: 116 and 39,
1612     cost of consumption: 597
1613 PIPELINE 535,
1614     between: 35 and 64,
1615     cost of consumption: 657
1616 PIPELINE 536,
1617     between: 81 and 9,
1618     cost of consumption: 383
1619 PIPELINE 537,
1620     between: 45 and 60,
1621     cost of consumption: 891
1622 PIPELINE 538,
1623     between: 90 and 125,
1624     cost of consumption: 924
1625 PIPELINE 539,
1626     between: 113 and 93,
1627     cost of consumption: 891
1628 PIPELINE 540,
1629     between: 79 and 20,
1630     cost of consumption: 268
1631 PIPELINE 541,
1632     between: 60 and 102,
1633     cost of consumption: 415
1634 PIPELINE 542,
1635     between: 60 and 29,
1636     cost of consumption: 939
1637 PIPELINE 543,
1638     between: 37 and 119,
1639     cost of consumption: 173
1640 PIPELINE 544,
1641     between: 103 and 107,
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1642 cost of consumption: 716  
1643 PIPELINE 545,  
1644 between: 63 and 15,  
1645 cost of consumption: 796  
1646 PIPELINE 546,  
1647 between: 51 and 96,  
1648 cost of consumption: 445  
1649 PIPELINE 547,  
1650 between: 85 and 13,  
1651 cost of consumption: 401  
1652 PIPELINE 548,  
1653 between: 115 and 104,  
1654 cost of consumption: 263  
1655 PIPELINE 549,  
1656 between: 75 and 89,  
1657 cost of consumption: 652  
1658 PIPELINE 550,  
1659 between: 17 and 40,  
1660 cost of consumption: 201  
1661 PIPELINE 551,  
1662 between: 33 and 100,  
1663 cost of consumption: 623  
1664 PIPELINE 552,  
1665 between: 99 and 33,  
1666 cost of consumption: 508  
1667 PIPELINE 553,  
1668 between: 42 and 70,  
1669 cost of consumption: 20  
1670 PIPELINE 554,  
1671 between: 82 and 45,  
1672 cost of consumption: 519  
1673 PIPELINE 555,  
1674 between: 34 and 108,  
1675 cost of consumption: 142  
1676 PIPELINE 556,  
1677 between: 49 and 31,  
1678 cost of consumption: 591  
1679 PIPELINE 557,  
1680 between: 74 and 116,  
1681 cost of consumption: 284  
1682 PIPELINE 558,  
1683 between: 30 and 104,  
1684 cost of consumption: 604  
1685 PIPELINE 559,  
1686 between: 112 and 51,  
1687 cost of consumption: 702  
1688 PIPELINE 560,  
1689 between: 32 and 68,  
1690 cost of consumption: 78  
1691 PIPELINE 561,  
1692 between: 100 and 101,  
1693 cost of consumption: 691  
1694 PIPELINE 562,  
1695 between: 14 and 73,  
1696 cost of consumption: 852  
1697 PIPELINE 563,  
1698 between: 86 and 115,  
1699 cost of consumption: 682  
1700 PIPELINE 564,  
1701 between: 21 and 69,  
1702 cost of consumption: 343  
1703 PIPELINE 565,  
1704 between: 63 and 103,  
1705 cost of consumption: 779  
1706 PIPELINE 566,  
1707 between: 121 and 25,  
1708 cost of consumption: 994  
1709 PIPELINE 567,  
1710 between: 19 and 99,  
1711 cost of consumption: 718  
1712 PIPELINE 568,  
1713 between: 58 and 1,  
1714 cost of consumption: 486  
1715 PIPELINE 569,  
1716 between: 74 and 114,  
1717 cost of consumption: 273  
1718 PIPELINE 570,  
1719 between: 51 and 18,  
1720 cost of consumption: 614  
1721 PIPELINE 571,  
1722 between: 68 and 118,  
1723 cost of consumption: 771  
1724 PIPELINE 572,  
1725 between: 58 and 4,  
1726 cost of consumption: 508  
1727 PIPELINE 573,  
1728 between: 81 and 90,  
1729 cost of consumption: 759  
1730 PIPELINE 574,  
1731 between: 46 and 111,  
1732 cost of consumption: 45  
1733 PIPELINE 575,  
1734 between: 56 and 47,  
1735 cost of consumption: 428  
1736 PIPELINE 576,  
1737 between: 46 and 40,  
1738 cost of consumption: 701  
1739 PIPELINE 577,  
1740 between: 67 and 59,  
1741 cost of consumption: 656  
1742 PIPELINE 578,  
1743 between: 77 and 117,  
1744 cost of consumption: 690  
1745 PIPELINE 579,  
1746 between: 62 and 63,  
1747 cost of consumption: 764  
1748 PIPELINE 580,  
1749 between: 99 and 114,  
1750 cost of consumption: 822

1751 PIPELINE 501,  
1752     between: 76 and 55,  
1753     cost of consumption: 116  
1754 PIPELINE 582,  
1755     between: 26 and 113,  
1756     cost of consumption: 560  
1757 PIPELINE 583,  
1758     between: 50 and 67,  
1759     cost of consumption: 363  
1760 PIPELINE 584,  
1761     between: 60 and 113,  
1762     cost of consumption: 538  
1763 PIPELINE 585,  
1764     between: 12 and 42,  
1765     cost of consumption: 601  
1766 PIPELINE 586,  
1767     between: 68 and 88,  
1768     cost of consumption: 41  
1769 PIPELINE 587,  
1770     between: 20 and 28,  
1771     cost of consumption: 796  
1772 PIPELINE 588,  
1773     between: 72 and 105,  
1774     cost of consumption: 146  
1775 PIPELINE 589,  
1776     between: 125 and 39,  
1777     cost of consumption: 41  
1778 PIPELINE 590,  
1779     between: 36 and 10,  
1780     cost of consumption: 180  
1781 PIPELINE 591,  
1782     between: 93 and 86,  
1783     cost of consumption: 987  
1784 PIPELINE 592,  
1785     between: 12 and 113,  
1786     cost of consumption: 852  
1787 PIPELINE 593,  
1788     between: 63 and 35,  
1789     cost of consumption: 271  
1790 PIPELINE 594,  
1791     between: 77 and 95,  
1792     cost of consumption: 921  
1793 PIPELINE 595,  
1794     between: 75 and 108,  
1795     cost of consumption: 843  
1796 PIPELINE 596,  
1797     between: 119 and 48,  
1798     cost of consumption: 811  
1799 PIPELINE 597,  
1800     between: 76 and 68,  
1801     cost of consumption: 815  
1802 PIPELINE 598,  
1803     between: 91 and 12,  
1804     cost of consumption: 568  
1805 PIPELINE 599,  
1806     between: 96 and 9,  
1807     cost of consumption: 256  
1808 PIPELINE 600,  
1809     between: 37 and 45,  
1810     cost of consumption: 146  
1811 PIPELINE 601,  
1812     between: 92 and 10,  
1813     cost of consumption: 849  
1814 PIPELINE 602,  
1815     between: 74 and 22,  
1816     cost of consumption: 834  
1817 PIPELINE 603,  
1818     between: 41 and 86,  
1819     cost of consumption: 901  
1820 PIPELINE 604,  
1821     between: 76 and 35,  
1822     cost of consumption: 860  
1823 PIPELINE 605,  
1824     between: 96 and 110,  
1825     cost of consumption: 48  
1826 PIPELINE 606,  
1827     between: 30 and 102,  
1828     cost of consumption: 944  
1829 PIPELINE 607,  
1830     between: 52 and 50,  
1831     cost of consumption: 893  
1832 PIPELINE 608,  
1833     between: 103 and 13,  
1834     cost of consumption: 545  
1835 PIPELINE 609,  
1836     between: 2 and 110,  
1837     cost of consumption: 291  
1838 PIPELINE 610,  
1839     between: 69 and 19,  
1840     cost of consumption: 888  
1841 PIPELINE 611,  
1842     between: 19 and 111,  
1843     cost of consumption: 155  
1844 PIPELINE 612,  
1845     between: 55 and 57,  
1846     cost of consumption: 201  
1847 PIPELINE 613,  
1848     between: 76 and 98,  
1849     cost of consumption: 287  
1850 PIPELINE 614,  
1851     between: 4 and 46,  
1852     cost of consumption: 67  
1853 PIPELINE 615,  
1854     between: 27 and 14,  
1855     cost of consumption: 777  
1856 PIPELINE 616,  
1857     between: 31 and 44,  
1858     cost of consumption: 15  
1859 PIPELINE 617,  
1860     between: 82 and 97,

1861 cost of consumption: 465  
1862 PIPELINE 618,  
1863 between: 74 and 72,  
1864 cost of consumption: 271  
1865 PIPELINE 619,  
1866 between: 79 and 74,  
1867 cost of consumption: 573  
1868 PIPELINE 620,  
1869 between: 93 and 16,  
1870 cost of consumption: 760  
1871 PIPELINE 621,  
1872 between: 24 and 35,  
1873 cost of consumption: 655  
1874 PIPELINE 622,  
1875 between: 94 and 90,  
1876 cost of consumption: 944  
1877 PIPELINE 623,  
1878 between: 59 and 38,  
1879 cost of consumption: 122  
1880 PIPELINE 624,  
1881 between: 109 and 42,  
1882 cost of consumption: 809  
1883 PIPELINE 625,  
1884 between: 67 and 69,  
1885 cost of consumption: 919  
1886 PIPELINE 626,  
1887 between: 8 and 100,  
1888 cost of consumption: 996  
1889 PIPELINE 627,  
1890 between: 50 and 55,  
1891 cost of consumption: 845  
1892 PIPELINE 628,  
1893 between: 15 and 1,  
1894 cost of consumption: 925  
1895 PIPELINE 629,  
1896 between: 121 and 80,  
1897 cost of consumption: 503  
1898 PIPELINE 630,  
1899 between: 81 and 45,  
1900 cost of consumption: 183  
1901 PIPELINE 631,  
1902 between: 60 and 70,  
1903 cost of consumption: 106  
1904 PIPELINE 632,  
1905 between: 22 and 36,  
1906 cost of consumption: 116  
1907 PIPELINE 633,  
1908 between: 41 and 95,  
1909 cost of consumption: 746  
1910 PIPELINE 634,  
1911 between: 30 and 77,  
1912 cost of consumption: 892  
1913 PIPELINE 635,  
1914 between: 66 and 16,  
1915 cost of consumption: 58  
1916 PIPELINE 636,  
1917 between: 117 and 24,  
1918 cost of consumption: 990  
1919 PIPELINE 637,  
1920 between: 84 and 75,  
1921 cost of consumption: 277  
1922 PIPELINE 638,  
1923 between: 20 and 90,  
1924 cost of consumption: 511  
1925 PIPELINE 639,  
1926 between: 28 and 83,  
1927 cost of consumption: 231  
1928 PIPELINE 640,  
1929 between: 110 and 36,  
1930 cost of consumption: 77  
1931 PIPELINE 641,  
1932 between: 81 and 96,  
1933 cost of consumption: 931  
1934 PIPELINE 642,  
1935 between: 86 and 118,  
1936 cost of consumption: 943  
1937 PIPELINE 643,  
1938 between: 54 and 31,  
1939 cost of consumption: 15  
1940 PIPELINE 644,  
1941 between: 59 and 61,  
1942 cost of consumption: 428  
1943 PIPELINE 645,  
1944 between: 107 and 0,  
1945 cost of consumption: 244  
1946 PIPELINE 646,  
1947 between: 96 and 117,  
1948 cost of consumption: 941  
1949 PIPELINE 647,  
1950 between: 57 and 73,  
1951 cost of consumption: 176  
1952 PIPELINE 648,  
1953 between: 74 and 93,  
1954 cost of consumption: 114  
1955 PIPELINE 649,  
1956 between: 92 and 121,  
1957 cost of consumption: 669  
1958 PIPELINE 650,  
1959 between: 62 and 103,  
1960 cost of consumption: 113  
1961 PIPELINE 651,  
1962 between: 78 and 56,  
1963 cost of consumption: 849  
1964 PIPELINE 652,  
1965 between: 36 and 15,  
1966 cost of consumption: 879  
1967 PIPELINE 653,  
1968 between: 31 and 69,  
1969 cost of consumption: 494  
1970 PIPELINE 654

1970 PIPELINE 654,  
1971     between: 121 and 0,  
1972         cost of consumption: 811  
1973 PIPELINE 655,  
1974     between: 32 and 107,  
1975         cost of consumption: 283  
1976 PIPELINE 656,  
1977     between: 87 and 75,  
1978         cost of consumption: 528  
1979 PIPELINE 657,  
1980     between: 39 and 5,  
1981         cost of consumption: 889  
1982 PIPELINE 658,  
1983     between: 66 and 79,  
1984         cost of consumption: 854  
1985 PIPELINE 659,  
1986     between: 55 and 43,  
1987         cost of consumption: 47  
1988 PIPELINE 660,  
1989     between: 127 and 105,  
1990         cost of consumption: 967  
1991 PIPELINE 661,  
1992     between: 107 and 56,  
1993         cost of consumption: 143  
1994 PIPELINE 662,  
1995     between: 55 and 92,  
1996         cost of consumption: 678  
1997 PIPELINE 663,  
1998     between: 121 and 123,  
1999         cost of consumption: 387  
2000 PIPELINE 664,  
2001     between: 90 and 116,  
2002         cost of consumption: 12  
2003 PIPELINE 665,  
2004     between: 121 and 20,  
2005         cost of consumption: 439  
2006 PIPELINE 666,  
2007     between: 23 and 108,  
2008         cost of consumption: 723  
2009 PIPELINE 667,  
2010     between: 43 and 19,  
2011         cost of consumption: 848  
2012 PIPELINE 668,  
2013     between: 7 and 86,  
2014         cost of consumption: 791  
2015 PIPELINE 669,  
2016     between: 65 and 13,  
2017         cost of consumption: 410  
2018 PIPELINE 670,  
2019     between: 115 and 13,  
2020         cost of consumption: 579  
2021 PIPELINE 671,  
2022     between: 13 and 120,  
2023         cost of consumption: 723  
2024 PIPELINE 672,  
2025     between: 96 and 48,  
2026         cost of consumption: 120  
2027 PIPELINE 673,  
2028     between: 65 and 41,  
2029         cost of consumption: 355  
2030 PIPELINE 674,  
2031     between: 104 and 4,  
2032         cost of consumption: 144  
2033 PIPELINE 675,  
2034     between: 15 and 125,  
2035         cost of consumption: 908  
2036 PIPELINE 676,  
2037     between: 33 and 20,  
2038         cost of consumption: 888  
2039 PIPELINE 677,  
2040     between: 127 and 63,  
2041         cost of consumption: 668  
2042 PIPELINE 678,  
2043     between: 98 and 71,  
2044         cost of consumption: 474  
2045 PIPELINE 679,  
2046     between: 20 and 8,  
2047         cost of consumption: 711  
2048 PIPELINE 680,  
2049     between: 113 and 123,  
2050         cost of consumption: 748  
2051 PIPELINE 681,  
2052     between: 56 and 9,  
2053         cost of consumption: 693  
2054 PIPELINE 682,  
2055     between: 54 and 105,  
2056         cost of consumption: 37  
2057 PIPELINE 683,  
2058     between: 17 and 42,  
2059         cost of consumption: 710  
2060 PIPELINE 684,  
2061     between: 104 and 18,  
2062         cost of consumption: 850  
2063 PIPELINE 685,  
2064     between: 51 and 33,  
2065         cost of consumption: 263  
2066 PIPELINE 686,  
2067     between: 18 and 67,  
2068         cost of consumption: 932  
2069 PIPELINE 687,  
2070     between: 94 and 66,  
2071         cost of consumption: 731  
2072 PIPELINE 688,  
2073     between: 61 and 37,  
2074         cost of consumption: 194  
2075 PIPELINE 689,  
2076     between: 114 and 57,  
2077         cost of consumption: 522  
2078 PIPELINE 690,  
2079     between: 52 and 43,

2080 cost of consumption: 110  
2081 PIPELINE 691,  
2082 between: 4 and 99,  
2083 cost of consumption: 271  
2084 PIPELINE 692,  
2085 between: 76 and 25,  
2086 cost of consumption: 792  
2087 PIPELINE 693,  
2088 between: 68 and 43,  
2089 cost of consumption: 50  
2090 PIPELINE 694,  
2091 between: 101 and 19,  
2092 cost of consumption: 781  
2093 PIPELINE 695,  
2094 between: 11 and 70,  
2095 cost of consumption: 638  
2096 PIPELINE 696,  
2097 between: 45 and 88,  
2098 cost of consumption: 409  
2099 PIPELINE 697,  
2100 between: 100 and 54,  
2101 cost of consumption: 460  
2102 PIPELINE 698,  
2103 between: 91 and 115,  
2104 cost of consumption: 689  
2105 PIPELINE 699,  
2106 between: 24 and 101,  
2107 cost of consumption: 530  
2108 PIPELINE 700,  
2109 between: 94 and 26,  
2110 cost of consumption: 741  
2111 PIPELINE 701,  
2112 between: 31 and 30,  
2113 cost of consumption: 896  
2114 PIPELINE 702,  
2115 between: 105 and 106,  
2116 cost of consumption: 66  
2117 PIPELINE 703,  
2118 between: 28 and 46,  
2119 cost of consumption: 365  
2120 PIPELINE 704,  
2121 between: 121 and 19,  
2122 cost of consumption: 848  
2123 PIPELINE 705,  
2124 between: 105 and 30,  
2125 cost of consumption: 950  
2126 PIPELINE 706,  
2127 between: 123 and 76,  
2128 cost of consumption: 630  
2129 PIPELINE 707,  
2130 between: 79 and 48,  
2131 cost of consumption: 421  
2132 PIPELINE 708,  
2133 between: 102 and 11,  
2134 cost of consumption: 984  
2135 PIPELINE 709,  
2136 between: 34 and 36,  
2137 cost of consumption: 494  
2138 PIPELINE 710,  
2139 between: 24 and 2,  
2140 cost of consumption: 656  
2141 PIPELINE 711,  
2142 between: 56 and 33,  
2143 cost of consumption: 566  
2144 PIPELINE 712,  
2145 between: 60 and 10,  
2146 cost of consumption: 912  
2147 PIPELINE 713,  
2148 between: 89 and 38,  
2149 cost of consumption: 430  
2150 PIPELINE 714,  
2151 between: 33 and 31,  
2152 cost of consumption: 473  
2153 PIPELINE 715,  
2154 between: 124 and 9,  
2155 cost of consumption: 888  
2156 PIPELINE 716,  
2157 between: 29 and 4,  
2158 cost of consumption: 636  
2159 PIPELINE 717,  
2160 between: 22 and 83,  
2161 cost of consumption: 996  
2162 PIPELINE 718,  
2163 between: 70 and 58,  
2164 cost of consumption: 344  
2165 PIPELINE 719,  
2166 between: 106 and 92,  
2167 cost of consumption: 220  
2168 PIPELINE 720,  
2169 between: 115 and 116,  
2170 cost of consumption: 142  
2171 PIPELINE 721,  
2172 between: 22 and 45,  
2173 cost of consumption: 215  
2174 PIPELINE 722,  
2175 between: 87 and 105,  
2176 cost of consumption: 57  
2177 PIPELINE 723,  
2178 between: 2 and 66,  
2179 cost of consumption: 455  
2180 PIPELINE 724,  
2181 between: 91 and 99,  
2182 cost of consumption: 806  
2183 PIPELINE 725,  
2184 between: 71 and 95,  
2185 cost of consumption: 239  
2186 PIPELINE 726,  
2187 between: 82 and 124,  
2188 cost of consumption: 35  
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2189 PIPELINE 727,  
2190     between: 41 and 18,  
2191     cost of consumption: 951  
2192 PIPELINE 728,  
2193     between: 49 and 89,  
2194     cost of consumption: 793  
2195 PIPELINE 729,  
2196     between: 68 and 67,  
2197     cost of consumption: 893  
2198 PIPELINE 730,  
2199     between: 123 and 54,  
2200     cost of consumption: 482  
2201 PIPELINE 731,  
2202     between: 52 and 76,  
2203     cost of consumption: 943  
2204 PIPELINE 732,  
2205     between: 14 and 35,  
2206     cost of consumption: 168  
2207 PIPELINE 733,  
2208     between: 114 and 37,  
2209     cost of consumption: 570  
2210 PIPELINE 734,  
2211     between: 124 and 0,  
2212     cost of consumption: 213  
2213 PIPELINE 735,  
2214     between: 37 and 71,  
2215     cost of consumption: 236  
2216 PIPELINE 736,  
2217     between: 88 and 26,  
2218     cost of consumption: 640  
2219 PIPELINE 737,  
2220     between: 14 and 67,  
2221     cost of consumption: 698  
2222 PIPELINE 738,  
2223     between: 24 and 116,  
2224     cost of consumption: 179  
2225 PIPELINE 739,  
2226     between: 92 and 56,  
2227     cost of consumption: 62  
2228 PIPELINE 740,  
2229     between: 125 and 51,  
2230     cost of consumption: 836  
2231 PIPELINE 741,  
2232     between: 18 and 103,  
2233     cost of consumption: 152  
2234 PIPELINE 742,  
2235     between: 84 and 117,  
2236     cost of consumption: 571  
2237 PIPELINE 743,  
2238     between: 127 and 103,  
2239     cost of consumption: 352  
2240 PIPELINE 744,  
2241     between: 108 and 99,  
2242     cost of consumption: 920  
2243 PIPELINE 745,  
2244     between: 60 and 9,  
2245     cost of consumption: 744  
2246 PIPELINE 746,  
2247     between: 107 and 97,  
2248     cost of consumption: 58  
2249 PIPELINE 747,  
2250     between: 22 and 111,  
2251     cost of consumption: 493  
2252 PIPELINE 748,  
2253     between: 83 and 8,  
2254     cost of consumption: 98  
2255 PIPELINE 749,  
2256     between: 106 and 100,  
2257     cost of consumption: 858  
2258 PIPELINE 750,  
2259     between: 67 and 97,  
2260     cost of consumption: 990  
2261 PIPELINE 751,  
2262     between: 83 and 115,  
2263     cost of consumption: 981  
2264 PIPELINE 752,  
2265     between: 46 and 71,  
2266     cost of consumption: 395  
2267 PIPELINE 753,  
2268     between: 45 and 70,  
2269     cost of consumption: 930  
2270 PIPELINE 754,  
2271     between: 80 and 50,  
2272     cost of consumption: 742  
2273 PIPELINE 755,  
2274     between: 116 and 110,  
2275     cost of consumption: 279  
2276 PIPELINE 756,  
2277     between: 95 and 89,  
2278     cost of consumption: 480  
2279 PIPELINE 757,  
2280     between: 100 and 111,  
2281     cost of consumption: 375  
2282 PIPELINE 758,  
2283     between: 44 and 67,  
2284     cost of consumption: 559  
2285 PIPELINE 759,  
2286     between: 105 and 45,  
2287     cost of consumption: 172  
2288 PIPELINE 760,  
2289     between: 95 and 112,  
2290     cost of consumption: 453  
2291 PIPELINE 761,  
2292     between: 8 and 67,  
2293     cost of consumption: 881  
2294 PIPELINE 762,  
2295     between: 24 and 114,  
2296     cost of consumption: 744  
2297 PIPELINE 763,  
2298     between: 30 and 31

2299        between: 30 and 31,  
2300        cost of consumption: 855  
2301        PIPELINE 764,  
2302             between: 12 and 111,  
2303             cost of consumption: 129  
2304        PIPELINE 765,  
2305             between: 93 and 99,  
2306             cost of consumption: 128  
2307        PIPELINE 766,  
2308             between: 55 and 66,  
2309             cost of consumption: 433  
2310        PIPELINE 767,  
2311             between: 114 and 38,  
2312             cost of consumption: 681  
2313        PIPELINE 768,  
2314             between: 28 and 83,  
2315             cost of consumption: 916  
2316        PIPELINE 769,  
2317             between: 79 and 60,  
2318             cost of consumption: 17  
2319        PIPELINE 770,  
2320             between: 102 and 27,  
2321             cost of consumption: 689  
2322        PIPELINE 771,  
2323             between: 94 and 35,  
2324             cost of consumption: 117  
2325        PIPELINE 772,  
2326             between: 74 and 60,  
2327             cost of consumption: 799  
2328        PIPELINE 773,  
2329             between: 126 and 90,  
2330             cost of consumption: 302  
2331        PIPELINE 774,  
2332             between: 120 and 102,  
2333             cost of consumption: 325  
2334        PIPELINE 775,  
2335             between: 36 and 67,  
2336             cost of consumption: 785  
2337        PIPELINE 776,  
2338             between: 63 and 122,  
2339             cost of consumption: 67  
2340        PIPELINE 777,  
2341             between: 52 and 108,  
2342             cost of consumption: 930  
2343        PIPELINE 778,  
2344             between: 24 and 9,  
2345             cost of consumption: 213  
2346        PIPELINE 779,  
2347             between: 63 and 88,  
2348             cost of consumption: 305  
2349        PIPELINE 780,  
2350             between: 19 and 62,  
2351             cost of consumption: 117  
2352        PIPELINE 781,  
2353             between: 87 and 28,  
2354             cost of consumption: 280  
2355        PIPELINE 782,  
2356             between: 95 and 103,  
2357             cost of consumption: 124  
2358        PIPELINE 783,  
2359             between: 89 and 101,  
2360             cost of consumption: 39  
2361        PIPELINE 784,  
2362             between: 114 and 93,  
2363             cost of consumption: 301  
2364        PIPELINE 785,  
2365             between: 123 and 1,  
2366             cost of consumption: 649  
2367        PIPELINE 786,  
2368             between: 103 and 65,  
2369             cost of consumption: 707  
2370        PIPELINE 787,  
2371             between: 21 and 117,  
2372             cost of consumption: 952  
2373        PIPELINE 788,  
2374             between: 106 and 13,  
2375             cost of consumption: 457  
2376        PIPELINE 789,  
2377             between: 18 and 76,  
2378             cost of consumption: 777  
2379        PIPELINE 790,  
2380             between: 119 and 95,  
2381             cost of consumption: 431  
2382        PIPELINE 791,  
2383             between: 119 and 54,  
2384             cost of consumption: 219  
2385        PIPELINE 792,  
2386             between: 26 and 22,  
2387             cost of consumption: 370  
2388        PIPELINE 793,  
2389             between: 122 and 111,  
2390             cost of consumption: 623  
2391        PIPELINE 794,  
2392             between: 52 and 98,  
2393             cost of consumption: 476  
2394        PIPELINE 795,  
2395             between: 84 and 93,  
2396             cost of consumption: 758  
2397        PIPELINE 796,  
2398             between: 56 and 68,  
2399             cost of consumption: 591  
2400        PIPELINE 797,  
2401             between: 23 and 89,  
2402             cost of consumption: 756  
2403        PIPELINE 798,  
2404             between: 98 and 68,  
2405             cost of consumption: 929  
2406        PIPELINE 799,  
2407             between: 54 and 86,  
                cost of consumption: 373

2408 PIPELINE 800,  
2409     between: 98 and 77,  
2410     cost of consumption: 452  
2411 PIPELINE 801,  
2412     between: 76 and 68,  
2413     cost of consumption: 498  
2414 PIPELINE 802,  
2415     between: 82 and 95,  
2416     cost of consumption: 976  
2417 PIPELINE 803,  
2418     between: 64 and 89,  
2419     cost of consumption: 680  
2420 PIPELINE 804,  
2421     between: 18 and 13,  
2422     cost of consumption: 906  
2423 PIPELINE 805,  
2424     between: 66 and 97,  
2425     cost of consumption: 975  
2426 PIPELINE 806,  
2427     between: 115 and 26,  
2428     cost of consumption: 19  
2429 PIPELINE 807,  
2430     between: 101 and 49,  
2431     cost of consumption: 100  
2432 PIPELINE 808,  
2433     between: 76 and 19,  
2434     cost of consumption: 496  
2435 PIPELINE 809,  
2436     between: 64 and 73,  
2437     cost of consumption: 415  
2438 PIPELINE 810,  
2439     between: 0 and 43,  
2440     cost of consumption: 508  
2441 PIPELINE 811,  
2442     between: 31 and 119,  
2443     cost of consumption: 889  
2444 PIPELINE 812,  
2445     between: 116 and 73,  
2446     cost of consumption: 184  
2447 PIPELINE 813,  
2448     between: 96 and 9,  
2449     cost of consumption: 161  
2450 PIPELINE 814,  
2451     between: 59 and 28,  
2452     cost of consumption: 206  
2453 PIPELINE 815,  
2454     between: 120 and 94,  
2455     cost of consumption: 967  
2456 PIPELINE 816,  
2457     between: 18 and 81,  
2458     cost of consumption: 89  
2459 PIPELINE 817,  
2460     between: 112 and 54,  
2461     cost of consumption: 922  
2462 PIPELINE 818,  
2463     between: 39 and 2,  
2464     cost of consumption: 469  
2465 PIPELINE 819,  
2466     between: 35 and 66,  
2467     cost of consumption: 830  
2468 PIPELINE 820,  
2469     between: 117 and 66,  
2470     cost of consumption: 481  
2471 PIPELINE 821,  
2472     between: 20 and 97,  
2473     cost of consumption: 848  
2474 PIPELINE 822,  
2475     between: 120 and 85,  
2476     cost of consumption: 498  
2477 PIPELINE 823,  
2478     between: 59 and 53,  
2479     cost of consumption: 499  
2480 PIPELINE 824,  
2481     between: 87 and 112,  
2482     cost of consumption: 767  
2483 PIPELINE 825,  
2484     between: 0 and 104,  
2485     cost of consumption: 477  
2486 PIPELINE 826,  
2487     between: 11 and 122,  
2488     cost of consumption: 734  
2489 PIPELINE 827,  
2490     between: 47 and 106,  
2491     cost of consumption: 124  
2492 PIPELINE 828,  
2493     between: 5 and 18,  
2494     cost of consumption: 46  
2495 PIPELINE 829,  
2496     between: 109 and 53,  
2497     cost of consumption: 776  
2498 PIPELINE 830,  
2499     between: 31 and 42,  
2500     cost of consumption: 386  
2501 PIPELINE 831,  
2502     between: 123 and 62,  
2503     cost of consumption: 619  
2504 PIPELINE 832,  
2505     between: 79 and 55,  
2506     cost of consumption: 25  
2507 PIPELINE 833,  
2508     between: 108 and 114,  
2509     cost of consumption: 574  
2510 PIPELINE 834,  
2511     between: 18 and 74,  
2512     cost of consumption: 591  
2513 PIPELINE 835,  
2514     between: 85 and 74,  
2515     cost of consumption: 31  
2516 PIPELINE 836,  
2517     between: 117 and 95

251        between: 111 and 65,  
252        cost of consumption: 866  
253 PIPELINE 837,  
254        between: 103 and 5,  
255        cost of consumption: 108  
256 PIPELINE 838,  
257        between: 14 and 10,  
258        cost of consumption: 854  
259 PIPELINE 839,  
260        between: 56 and 119,  
261        cost of consumption: 947  
262 PIPELINE 840,  
263        between: 35 and 22,  
264        cost of consumption: 797  
265 PIPELINE 841,  
266        between: 81 and 18,  
267        cost of consumption: 556  
268 PIPELINE 842,  
269        between: 95 and 97,  
270        cost of consumption: 811  
271 PIPELINE 843,  
272        between: 67 and 77,  
273        cost of consumption: 741  
274 PIPELINE 844,  
275        between: 93 and 95,  
276        cost of consumption: 503  
277 PIPELINE 845,  
278        between: 103 and 52,  
279        cost of consumption: 650  
280 PIPELINE 846,  
281        between: 89 and 42,  
282        cost of consumption: 495  
283 PIPELINE 847,  
284        between: 70 and 17,  
285        cost of consumption: 124  
286 PIPELINE 848,  
287        between: 30 and 31,  
288        cost of consumption: 806  
289 PIPELINE 849,  
290        between: 7 and 87,  
291        cost of consumption: 710  
292 PIPELINE 850,  
293        between: 38 and 123,  
294        cost of consumption: 956  
295 PIPELINE 851,  
296        between: 110 and 76,  
297        cost of consumption: 78  
298 PIPELINE 852,  
299        between: 117 and 43,  
300        cost of consumption: 567  
301 PIPELINE 853,  
302        between: 51 and 111,  
303        cost of consumption: 620  
304 PIPELINE 854,  
305        between: 100 and 76,  
306        cost of consumption: 380  
307 PIPELINE 855,  
308        between: 94 and 51,  
309        cost of consumption: 960  
310 PIPELINE 856,  
311        between: 35 and 12,  
312        cost of consumption: 186  
313 PIPELINE 857,  
314        between: 62 and 83,  
315        cost of consumption: 787  
316 PIPELINE 858,  
317        between: 93 and 113,  
318        cost of consumption: 235  
319 PIPELINE 859,  
320        between: 7 and 120,  
321        cost of consumption: 922  
322 PIPELINE 860,  
323        between: 40 and 30,  
324        cost of consumption: 269  
325 PIPELINE 861,  
326        between: 95 and 13,  
327        cost of consumption: 9  
328 PIPELINE 862,  
329        between: 41 and 2,  
330        cost of consumption: 109  
331 PIPELINE 863,  
332        between: 83 and 54,  
333        cost of consumption: 940  
334 PIPELINE 864,  
335        between: 75 and 26,  
336        cost of consumption: 720  
337 PIPELINE 865,  
338        between: 34 and 120,  
339        cost of consumption: 739  
340 PIPELINE 866,  
341        between: 45 and 28,  
342        cost of consumption: 671  
343 PIPELINE 867,  
344        between: 99 and 90,  
345        cost of consumption: 434  
346 PIPELINE 868,  
347        between: 41 and 55,  
348        cost of consumption: 427  
349 PIPELINE 869,  
350        between: 15 and 62,  
351        cost of consumption: 852  
352 PIPELINE 870,  
353        between: 77 and 102,  
354        cost of consumption: 354  
355 PIPELINE 871,  
356        between: 5 and 70,  
357        cost of consumption: 727  
358 PIPELINE 872,  
359        between: 10 and 111,  
360        cost of consumption: 170

```

2627 PIPELINE 873,
2628     between: 58 and 66,
2629     cost of consumption: 192
2630 PIPELINE 874,
2631     between: 89 and 13,
2632     cost of consumption: 530
2633 PIPELINE 875,
2634     between: 68 and 47,
2635     cost of consumption: 330
2636 PIPELINE 876,
2637     between: 98 and 93,
2638     cost of consumption: 590
2639 PIPELINE 877,
2640     between: 12 and 64,
2641     cost of consumption: 504
2642 PIPELINE 878,
2643     between: 10 and 105,
2644     cost of consumption: 488
2645 PIPELINE 879,
2646     between: 120 and 121,
2647     cost of consumption: 398
2648 PIPELINE 880,
2649     between: 95 and 70,
2650     cost of consumption: 589
2651 PIPELINE 881,
2652     between: 101 and 75,
2653     cost of consumption: 363
2654 PIPELINE 882,
2655     between: 119 and 85,
2656     cost of consumption: 794
2657 PIPELINE 883,
2658     between: 12 and 15,
2659     cost of consumption: 796
2660 PIPELINE 884,
2661     between: 87 and 104,
2662     cost of consumption: 986
2663 PIPELINE 885,
2664     between: 60 and 44,
2665     cost of consumption: 737
2666 PIPELINE 886,
2667     between: 26 and 14,
2668     cost of consumption: 358
2669 PIPELINE 887,
2670     between: 19 and 27,
2671     cost of consumption: 382
2672 PIPELINE 888,
2673     between: 103 and 37,
2674     cost of consumption: 240
2675 }
2676
2677 Number of Buildings:
2678 128
2679
2680 Builded Pipelined Structure of the Algorithm:
2681
2682 Expected pipelined structure : 78, 396, 499, 861, 161, 664, 213, 616, 643, 769, 806, 553, 832, 227, 254, 266, 433, 835, 155, 357, 726, 682, 783, 128,
2683
2684 Returned pipelined structure :78, 396, 499, 861, 161, 664, 213, 616, 643, 769, 806, 553, 832, 227, 254, 266, 433, 835, 155, 357, 726, 682, 783, 128,
2685
2686 CASE 6-initial pipeline construction of the algorithm: [OK]
2687
2688
2689
2690 The new pipeline :
2691 {
2692     PIPELINE 889,
2693         between: 59 and 100,
2694         cost of consumption: 66
2695 }
2696
2697 Expected updated pipelined structure : 78, 396, 499, 861, 161, 664, 213, 616, 643, 769, 806, 553, 832, 227, 254, 266, 433, 835, 155, 357, 726, 682, 783
2698
2699 Returned updated pipelined structure :78, 396, 499, 861, 161, 664, 213, 616, 643, 769, 806, 553, 832, 227, 254, 266, 433, 835, 155, 357, 726, 682, 783
2700
2701 CASE 6-updated pipeline construction of the algorithm: [OK]
2702 -----
2703 -----
2704
```

testcase7.txt

```
1 ----- CASE 7 -----
2
3 CASE 7
4 -----
5
6 Given Pipelines:
7 {
8   PIPELINE 0,
9     between: 0 and 0,
10    cost of consumption: 704
11   PIPELINE 1,
12     between: 1 and 1,
13    cost of consumption: 790
14   PIPELINE 2,
15     between: 2 and 2,
16    cost of consumption: 673
17   PIPELINE 3,
18     between: 3 and 3,
19    cost of consumption: 6
20   PIPELINE 4,
21     between: 4 and 4,
22    cost of consumption: 254
23   PIPELINE 5,
24     between: 5 and 5,
25    cost of consumption: 580
26   PIPELINE 6,
27     between: 6 and 6,
28    cost of consumption: 934
29   PIPELINE 7,
30     between: 7 and 7,
31    cost of consumption: 449
32   PIPELINE 8,
33     between: 8 and 8,
34    cost of consumption: 361
35   PIPELINE 9,
36     between: 9 and 9,
37    cost of consumption: 538
38   PIPELINE 10,
39     between: 10 and 10,
40    cost of consumption: 319
41   PIPELINE 11,
42     between: 11 and 11,
43    cost of consumption: 954
44   PIPELINE 12,
45     between: 12 and 12,
46    cost of consumption: 463
47   PIPELINE 13,
48     between: 13 and 13,
49    cost of consumption: 113
50   PIPELINE 14,
51     between: 14 and 14,
52    cost of consumption: 911
53   PIPELINE 15,
54     between: 15 and 15,
55    cost of consumption: 998
56   PIPELINE 16,
57     between: 16 and 16,
58    cost of consumption: 857
59   PIPELINE 17,
60     between: 17 and 17,
61    cost of consumption: 233
62   PIPELINE 18,
63     between: 18 and 18,
64    cost of consumption: 621
65   PIPELINE 19,
66     between: 19 and 19,
67    cost of consumption: 169
68   PIPELINE 20,
69     between: 20 and 20,
70    cost of consumption: 19
71   PIPELINE 21,
72     between: 21 and 21,
73    cost of consumption: 167
74   PIPELINE 22,
75     between: 22 and 22,
76    cost of consumption: 777
77   PIPELINE 23,
78     between: 23 and 23,
79    cost of consumption: 656
80   PIPELINE 24,
81     between: 24 and 24,
82    cost of consumption: 864
83   PIPELINE 25,
84     between: 25 and 25,
85    cost of consumption: 628
86   PIPELINE 26,
87     between: 26 and 26,
88    cost of consumption: 609
89   PIPELINE 27,
90     between: 27 and 27,
91    cost of consumption: 152
92   PIPELINE 28,
93     between: 28 and 28,
94    cost of consumption: 949
95   PIPELINE 29,
96     between: 29 and 29,
97    cost of consumption: 428
98   PIPELINE 30,
99     between: 30 and 30,
100   cost of consumption: 642
101  PIPELINE 31,
102    between: 31 and 31,
103   cost of consumption: 648
104  PIPELINE 32,
105   between: 32 and 32,
106   cost of consumption: 566
107  PIPELINE 33,
108   between: 33 and 33,
109   cost of consumption: 310
110 PIPELINE 34
```

110 PIPELINE 34,  
111     between: 34 and 34,  
112     cost of consumption: 650  
113 PIPELINE 35,  
114     between: 35 and 35,  
115     cost of consumption: 815  
116 PIPELINE 36,  
117     between: 36 and 36,  
118     cost of consumption: 886  
119 PIPELINE 37,  
120     between: 37 and 37,  
121     cost of consumption: 931  
122 PIPELINE 38,  
123     between: 38 and 38,  
124     cost of consumption: 259  
125 PIPELINE 39,  
126     between: 39 and 39,  
127     cost of consumption: 594  
128 PIPELINE 40,  
129     between: 40 and 40,  
130     cost of consumption: 817  
131 PIPELINE 41,  
132     between: 41 and 41,  
133     cost of consumption: 925  
134 PIPELINE 42,  
135     between: 42 and 42,  
136     cost of consumption: 544  
137 PIPELINE 43,  
138     between: 43 and 43,  
139     cost of consumption: 275  
140 PIPELINE 44,  
141     between: 44 and 44,  
142     cost of consumption: 34  
143 PIPELINE 45,  
144     between: 45 and 45,  
145     cost of consumption: 450  
146 PIPELINE 46,  
147     between: 46 and 46,  
148     cost of consumption: 269  
149 PIPELINE 47,  
150     between: 47 and 47,  
151     cost of consumption: 886  
152 PIPELINE 48,  
153     between: 48 and 48,  
154     cost of consumption: 30  
155 PIPELINE 49,  
156     between: 49 and 49,  
157     cost of consumption: 237  
158 PIPELINE 50,  
159     between: 50 and 50,  
160     cost of consumption: 402  
161 PIPELINE 51,  
162     between: 51 and 51,  
163     cost of consumption: 44  
164 PIPELINE 52,  
165     between: 52 and 52,  
166     cost of consumption: 400  
167 PIPELINE 53,  
168     between: 53 and 53,  
169     cost of consumption: 174  
170 PIPELINE 54,  
171     between: 54 and 54,  
172     cost of consumption: 48  
173 PIPELINE 55,  
174     between: 55 and 55,  
175     cost of consumption: 611  
176 PIPELINE 56,  
177     between: 56 and 56,  
178     cost of consumption: 798  
179 PIPELINE 57,  
180     between: 57 and 57,  
181     cost of consumption: 652  
182 PIPELINE 58,  
183     between: 58 and 58,  
184     cost of consumption: 759  
185 PIPELINE 59,  
186     between: 59 and 59,  
187     cost of consumption: 94  
188 PIPELINE 60,  
189     between: 60 and 60,  
190     cost of consumption: 428  
191 PIPELINE 61,  
192     between: 61 and 61,  
193     cost of consumption: 396  
194 PIPELINE 62,  
195     between: 62 and 62,  
196     cost of consumption: 89  
197 PIPELINE 63,  
198     between: 63 and 63,  
199     cost of consumption: 989  
200 PIPELINE 64,  
201     between: 64 and 64,  
202     cost of consumption: 54  
203 PIPELINE 65,  
204     between: 65 and 65,  
205     cost of consumption: 86  
206 PIPELINE 66,  
207     between: 66 and 66,  
208     cost of consumption: 799  
209 PIPELINE 67,  
210     between: 67 and 67,  
211     cost of consumption: 935  
212 PIPELINE 68,  
213     between: 68 and 68,  
214     cost of consumption: 13  
215 PIPELINE 69,  
216     between: 69 and 69,  
217     cost of consumption: 405  
218 PIPELINE 70,  
219     between: 70 and 70.

```
--      .. . . . .  
220      cost of consumption: 876  
221 PIPELINE 71,  
222      between: 71 and 71,  
223      cost of consumption: 825  
224 PIPELINE 72,  
225      between: 72 and 72,  
226      cost of consumption: 325  
227 PIPELINE 73,  
228      between: 73 and 73,  
229      cost of consumption: 415  
230 PIPELINE 74,  
231      between: 74 and 74,  
232      cost of consumption: 95  
233 PIPELINE 75,  
234      between: 75 and 75,  
235      cost of consumption: 354  
236 PIPELINE 76,  
237      between: 76 and 76,  
238      cost of consumption: 212  
239 PIPELINE 77,  
240      between: 77 and 77,  
241      cost of consumption: 711  
242 PIPELINE 78,  
243      between: 78 and 78,  
244      cost of consumption: 236  
245 PIPELINE 79,  
246      between: 79 and 79,  
247      cost of consumption: 590  
248 PIPELINE 80,  
249      between: 80 and 80,  
250      cost of consumption: 944  
251 PIPELINE 81,  
252      between: 81 and 81,  
253      cost of consumption: 633  
254 PIPELINE 82,  
255      between: 82 and 82,  
256      cost of consumption: 981  
257 PIPELINE 83,  
258      between: 83 and 83,  
259      cost of consumption: 691  
260 PIPELINE 84,  
261      between: 84 and 84,  
262      cost of consumption: 155  
263 PIPELINE 85,  
264      between: 85 and 85,  
265      cost of consumption: 376  
266 PIPELINE 86,  
267      between: 86 and 86,  
268      cost of consumption: 297  
269 PIPELINE 87,  
270      between: 87 and 87,  
271      cost of consumption: 300  
272 PIPELINE 88,  
273      between: 88 and 88,  
274      cost of consumption: 24  
275 PIPELINE 89,  
276      between: 89 and 89,  
277      cost of consumption: 403  
278 PIPELINE 90,  
279      between: 90 and 90,  
280      cost of consumption: 389  
281 PIPELINE 91,  
282      between: 91 and 91,  
283      cost of consumption: 799  
284 PIPELINE 92,  
285      between: 92 and 92,  
286      cost of consumption: 147  
287 PIPELINE 93,  
288      between: 93 and 93,  
289      cost of consumption: 825  
290 PIPELINE 94,  
291      between: 94 and 94,  
292      cost of consumption: 783  
293 PIPELINE 95,  
294      between: 95 and 95,  
295      cost of consumption: 196  
296 PIPELINE 96,  
297      between: 96 and 96,  
298      cost of consumption: 907  
299 PIPELINE 97,  
300      between: 97 and 97,  
301      cost of consumption: 929  
302 PIPELINE 98,  
303      between: 98 and 98,  
304      cost of consumption: 478  
305 PIPELINE 99,  
306      between: 99 and 99,  
307      cost of consumption: 915  
308 PIPELINE 100,  
309      between: 100 and 100,  
310      cost of consumption: 329  
311 PIPELINE 101,  
312      between: 101 and 101,  
313      cost of consumption: 349  
314 PIPELINE 102,  
315      between: 102 and 102,  
316      cost of consumption: 735  
317 PIPELINE 103,  
318      between: 103 and 103,  
319      cost of consumption: 649  
320 PIPELINE 104,  
321      between: 104 and 104,  
322      cost of consumption: 112  
323 PIPELINE 105,  
324      between: 105 and 105,  
325      cost of consumption: 177  
326 PIPELINE 106,  
327      between: 106 and 106,  
328      cost of consumption: 351
```

329 PIPELINE 107,  
330     between: 107 and 107,  
331     cost of consumption: 671  
332 PIPELINE 108,  
333     between: 108 and 108,  
334     cost of consumption: 884  
335 PIPELINE 109,  
336     between: 109 and 109,  
337     cost of consumption: 934  
338 PIPELINE 110,  
339     between: 110 and 110,  
340     cost of consumption: 608  
341 PIPELINE 111,  
342     between: 111 and 111,  
343     cost of consumption: 175  
344 PIPELINE 112,  
345     between: 112 and 112,  
346     cost of consumption: 914  
347 PIPELINE 113,  
348     between: 113 and 113,  
349     cost of consumption: 585  
350 PIPELINE 114,  
351     between: 114 and 114,  
352     cost of consumption: 861  
353 PIPELINE 115,  
354     between: 115 and 115,  
355     cost of consumption: 64  
356 PIPELINE 116,  
357     between: 116 and 116,  
358     cost of consumption: 956  
359 PIPELINE 117,  
360     between: 117 and 117,  
361     cost of consumption: 505  
362 PIPELINE 118,  
363     between: 118 and 118,  
364     cost of consumption: 359  
365 PIPELINE 119,  
366     between: 119 and 119,  
367     cost of consumption: 327  
368 PIPELINE 120,  
369     between: 120 and 120,  
370     cost of consumption: 904  
371 PIPELINE 121,  
372     between: 121 and 121,  
373     cost of consumption: 95  
374 PIPELINE 122,  
375     between: 122 and 122,  
376     cost of consumption: 121  
377 PIPELINE 123,  
378     between: 123 and 123,  
379     cost of consumption: 46  
380 PIPELINE 124,  
381     between: 124 and 124,  
382     cost of consumption: 916  
383 PIPELINE 125,  
384     between: 125 and 125,  
385     cost of consumption: 251  
386 PIPELINE 126,  
387     between: 126 and 126,  
388     cost of consumption: 589  
389 PIPELINE 127,  
390     between: 127 and 127,  
391     cost of consumption: 170  
392 PIPELINE 128,  
393     between: 128 and 128,  
394     cost of consumption: 175  
395 PIPELINE 129,  
396     between: 129 and 129,  
397     cost of consumption: 62  
398 PIPELINE 130,  
399     between: 130 and 130,  
400     cost of consumption: 80  
401 PIPELINE 131,  
402     between: 131 and 131,  
403     cost of consumption: 499  
404 PIPELINE 132,  
405     between: 132 and 132,  
406     cost of consumption: 406  
407 PIPELINE 133,  
408     between: 133 and 133,  
409     cost of consumption: 810  
410 PIPELINE 134,  
411     between: 134 and 134,  
412     cost of consumption: 496  
413 PIPELINE 135,  
414     between: 135 and 135,  
415     cost of consumption: 865  
416 PIPELINE 136,  
417     between: 136 and 136,  
418     cost of consumption: 334  
419 PIPELINE 137,  
420     between: 137 and 137,  
421     cost of consumption: 842  
422 PIPELINE 138,  
423     between: 138 and 138,  
424     cost of consumption: 532  
425 PIPELINE 139,  
426     between: 139 and 139,  
427     cost of consumption: 213  
428 PIPELINE 140,  
429     between: 140 and 140,  
430     cost of consumption: 123  
431 PIPELINE 141,  
432     between: 141 and 141,  
433     cost of consumption: 135  
434 PIPELINE 142,  
435     between: 142 and 142,  
436     cost of consumption: 735  
437 PIPELINE 143,  
438     between: 143 and 143

430        between: 143 and 143,  
431        cost of consumption: 32  
440 PIPELINE 144,  
441        between: 144 and 144,  
442        cost of consumption: 67  
443 PIPELINE 145,  
444        between: 145 and 145,  
445        cost of consumption: 591  
446 PIPELINE 146,  
447        between: 146 and 146,  
448        cost of consumption: 92  
449 PIPELINE 147,  
450        between: 147 and 147,  
451        cost of consumption: 371  
452 PIPELINE 148,  
453        between: 148 and 148,  
454        cost of consumption: 92  
455 PIPELINE 149,  
456        between: 149 and 149,  
457        cost of consumption: 798  
458 PIPELINE 150,  
459        between: 150 and 150,  
460        cost of consumption: 45  
461 PIPELINE 151,  
462        between: 151 and 151,  
463        cost of consumption: 343  
464 PIPELINE 152,  
465        between: 152 and 152,  
466        cost of consumption: 241  
467 PIPELINE 153,  
468        between: 153 and 153,  
469        cost of consumption: 514  
470 PIPELINE 154,  
471        between: 154 and 154,  
472        cost of consumption: 736  
473 PIPELINE 155,  
474        between: 155 and 155,  
475        cost of consumption: 504  
476 PIPELINE 156,  
477        between: 156 and 156,  
478        cost of consumption: 760  
479 PIPELINE 157,  
480        between: 157 and 157,  
481        cost of consumption: 320  
482 PIPELINE 158,  
483        between: 158 and 158,  
484        cost of consumption: 669  
485 PIPELINE 159,  
486        between: 159 and 159,  
487        cost of consumption: 931  
488 PIPELINE 160,  
489        between: 160 and 160,  
490        cost of consumption: 377  
491 PIPELINE 161,  
492        between: 161 and 161,  
493        cost of consumption: 744  
494 PIPELINE 162,  
495        between: 162 and 162,  
496        cost of consumption: 777  
497 PIPELINE 163,  
498        between: 163 and 163,  
499        cost of consumption: 130  
500 PIPELINE 164,  
501        between: 164 and 164,  
502        cost of consumption: 901  
503 PIPELINE 165,  
504        between: 165 and 165,  
505        cost of consumption: 268  
506 PIPELINE 166,  
507        between: 166 and 166,  
508        cost of consumption: 991  
509 PIPELINE 167,  
510        between: 167 and 167,  
511        cost of consumption: 230  
512 PIPELINE 168,  
513        between: 168 and 168,  
514        cost of consumption: 457  
515 PIPELINE 169,  
516        between: 169 and 169,  
517        cost of consumption: 870  
518 PIPELINE 170,  
519        between: 170 and 170,  
520        cost of consumption: 791  
521 PIPELINE 171,  
522        between: 171 and 171,  
523        cost of consumption: 575  
524 PIPELINE 172,  
525        between: 172 and 172,  
526        cost of consumption: 352  
527 PIPELINE 173,  
528        between: 173 and 173,  
529        cost of consumption: 521  
530 PIPELINE 174,  
531        between: 174 and 174,  
532        cost of consumption: 955  
533 PIPELINE 175,  
534        between: 175 and 175,  
535        cost of consumption: 767  
536 PIPELINE 176,  
537        between: 176 and 176,  
538        cost of consumption: 460  
539 PIPELINE 177,  
540        between: 177 and 177,  
541        cost of consumption: 42  
542 PIPELINE 178,  
543        between: 178 and 178,  
544        cost of consumption: 133  
545 PIPELINE 179,  
546        between: 179 and 179,  
547        cost of consumption: 899

548 PIPELINE 180,  
549     between: 180 and 180,  
550     cost of consumption: 187  
551 PIPELINE 181,  
552     between: 181 and 181,  
553     cost of consumption: 173  
554 PIPELINE 182,  
555     between: 182 and 182,  
556     cost of consumption: 237  
557 PIPELINE 183,  
558     between: 183 and 183,  
559     cost of consumption: 775  
560 PIPELINE 184,  
561     between: 184 and 184,  
562     cost of consumption: 682  
563 PIPELINE 185,  
564     between: 185 and 185,  
565     cost of consumption: 968  
566 PIPELINE 186,  
567     between: 186 and 186,  
568     cost of consumption: 274  
569 PIPELINE 187,  
570     between: 187 and 187,  
571     cost of consumption: 790  
572 PIPELINE 188,  
573     between: 188 and 188,  
574     cost of consumption: 635  
575 PIPELINE 189,  
576     between: 189 and 189,  
577     cost of consumption: 938  
578 PIPELINE 190,  
579     between: 190 and 190,  
580     cost of consumption: 716  
581 PIPELINE 191,  
582     between: 191 and 191,  
583     cost of consumption: 7  
584 PIPELINE 192,  
585     between: 192 and 192,  
586     cost of consumption: 29  
587 PIPELINE 193,  
588     between: 193 and 193,  
589     cost of consumption: 488  
590 PIPELINE 194,  
591     between: 194 and 194,  
592     cost of consumption: 484  
593 PIPELINE 195,  
594     between: 195 and 195,  
595     cost of consumption: 925  
596 PIPELINE 196,  
597     between: 196 and 196,  
598     cost of consumption: 104  
599 PIPELINE 197,  
600     between: 197 and 197,  
601     cost of consumption: 822  
602 PIPELINE 198,  
603     between: 198 and 198,  
604     cost of consumption: 503  
605 PIPELINE 199,  
606     between: 199 and 199,  
607     cost of consumption: 908  
608 PIPELINE 200,  
609     between: 200 and 200,  
610     cost of consumption: 687  
611 PIPELINE 201,  
612     between: 201 and 201,  
613     cost of consumption: 289  
614 PIPELINE 202,  
615     between: 202 and 202,  
616     cost of consumption: 831  
617 PIPELINE 203,  
618     between: 203 and 203,  
619     cost of consumption: 387  
620 PIPELINE 204,  
621     between: 204 and 204,  
622     cost of consumption: 157  
623 PIPELINE 205,  
624     between: 205 and 205,  
625     cost of consumption: 781  
626 PIPELINE 206,  
627     between: 206 and 206,  
628     cost of consumption: 149  
629 PIPELINE 207,  
630     between: 207 and 207,  
631     cost of consumption: 964  
632 PIPELINE 208,  
633     between: 208 and 208,  
634     cost of consumption: 170  
635 PIPELINE 209,  
636     between: 209 and 209,  
637     cost of consumption: 629  
638 PIPELINE 210,  
639     between: 210 and 210,  
640     cost of consumption: 858  
641 PIPELINE 211,  
642     between: 211 and 211,  
643     cost of consumption: 352  
644 PIPELINE 212,  
645     between: 212 and 212,  
646     cost of consumption: 797  
647 PIPELINE 213,  
648     between: 213 and 213,  
649     cost of consumption: 442  
650 PIPELINE 214,  
651     between: 214 and 214,  
652     cost of consumption: 123  
653 PIPELINE 215,  
654     between: 215 and 215,  
655     cost of consumption: 827  
656 PIPELINE 216,  
657     between: 216 and 216

551        between: z16 and z16,  
552        cost of consumption: 757  
553 PIPELINE 217,  
554        between: 217 and 217,  
555        cost of consumption: 744  
556 PIPELINE 218,  
557        between: 218 and 218,  
558        cost of consumption: 964  
559 PIPELINE 219,  
560        between: 219 and 219,  
561        cost of consumption: 387  
562 PIPELINE 220,  
563        between: 220 and 220,  
564        cost of consumption: 678  
565 PIPELINE 221,  
566        between: 221 and 221,  
567        cost of consumption: 675  
568 PIPELINE 222,  
569        between: 222 and 222,  
570        cost of consumption: 741  
571 PIPELINE 223,  
572        between: 223 and 223,  
573        cost of consumption: 702  
574 PIPELINE 224,  
575        between: 224 and 224,  
576        cost of consumption: 510  
577 PIPELINE 225,  
578        between: 225 and 225,  
579        cost of consumption: 221  
580 PIPELINE 226,  
581        between: 226 and 226,  
582        cost of consumption: 975  
583 PIPELINE 227,  
584        between: 227 and 227,  
585        cost of consumption: 609  
586 PIPELINE 228,  
587        between: 228 and 228,  
588        cost of consumption: 38  
589 PIPELINE 229,  
590        between: 229 and 229,  
591        cost of consumption: 473  
592 PIPELINE 230,  
593        between: 230 and 230,  
594        cost of consumption: 865  
595 PIPELINE 231,  
596        between: 231 and 231,  
597        cost of consumption: 73  
598 PIPELINE 232,  
599        between: 232 and 232,  
600        cost of consumption: 109  
601 PIPELINE 233,  
602        between: 233 and 233,  
603        cost of consumption: 691  
604 PIPELINE 234,  
605        between: 234 and 234,  
606        cost of consumption: 455  
607 PIPELINE 235,  
608        between: 235 and 235,  
609        cost of consumption: 261  
610 PIPELINE 236,  
611        between: 236 and 236,  
612        cost of consumption: 467  
613 PIPELINE 237,  
614        between: 237 and 237,  
615        cost of consumption: 951  
616 PIPELINE 238,  
617        between: 238 and 238,  
618        cost of consumption: 221  
619 PIPELINE 239,  
620        between: 239 and 239,  
621        cost of consumption: 632  
622 PIPELINE 240,  
623        between: 240 and 240,  
624        cost of consumption: 575  
625 PIPELINE 241,  
626        between: 241 and 241,  
627        cost of consumption: 426  
628 PIPELINE 242,  
629        between: 242 and 242,  
630        cost of consumption: 331  
631 PIPELINE 243,  
632        between: 243 and 243,  
633        cost of consumption: 719  
634 PIPELINE 244,  
635        between: 244 and 244,  
636        cost of consumption: 216  
637 PIPELINE 245,  
638        between: 245 and 245,  
639        cost of consumption: 449  
640 PIPELINE 246,  
641        between: 246 and 246,  
642        cost of consumption: 541  
643 PIPELINE 247,  
644        between: 247 and 247,  
645        cost of consumption: 320  
646 PIPELINE 248,  
647        between: 248 and 248,  
648        cost of consumption: 189  
649 PIPELINE 249,  
650        between: 249 and 249,  
651        cost of consumption: 852  
652 PIPELINE 250,  
653        between: 250 and 250,  
654        cost of consumption: 55  
655 PIPELINE 251,  
656        between: 251 and 251,  
657        cost of consumption: 214  
658 PIPELINE 252,  
659        between: 252 and 252,  
660        cost of consumption: 522

767 PIPELINE 253,  
768     between: 253 and 253,  
769     cost of consumption: 791  
770 PIPELINE 254,  
771     between: 254 and 254,  
772     cost of consumption: 263  
773 PIPELINE 255,  
774     between: 255 and 255,  
775     cost of consumption: 380  
776 PIPELINE 256,  
777     between: 186 and 60,  
778     cost of consumption: 984  
779 PIPELINE 257,  
780     between: 124 and 160,  
781     cost of consumption: 196  
782 PIPELINE 258,  
783     between: 152 and 48,  
784     cost of consumption: 882  
785 PIPELINE 259,  
786     between: 98 and 249,  
787     cost of consumption: 344  
788 PIPELINE 260,  
789     between: 20 and 185,  
790     cost of consumption: 971  
791 PIPELINE 261,  
792     between: 6 and 30,  
793     cost of consumption: 298  
794 PIPELINE 262,  
795     between: 216 and 25,  
796     cost of consumption: 94  
797 PIPELINE 263,  
798     between: 185 and 21,  
799     cost of consumption: 630  
800 PIPELINE 264,  
801     between: 96 and 135,  
802     cost of consumption: 839  
803 PIPELINE 265,  
804     between: 110 and 121,  
805     cost of consumption: 98  
806 PIPELINE 266,  
807     between: 181 and 52,  
808     cost of consumption: 678  
809 PIPELINE 267,  
810     between: 128 and 176,  
811     cost of consumption: 727  
812 PIPELINE 268,  
813     between: 8 and 72,  
814     cost of consumption: 879  
815 PIPELINE 269,  
816     between: 37 and 170,  
817     cost of consumption: 640  
818 PIPELINE 270,  
819     between: 177 and 190,  
820     cost of consumption: 321  
821 PIPELINE 271,  
822     between: 103 and 196,  
823     cost of consumption: 424  
824 PIPELINE 272,  
825     between: 92 and 156,  
826     cost of consumption: 737  
827 PIPELINE 273,  
828     between: 150 and 85,  
829     cost of consumption: 718  
830 PIPELINE 274,  
831     between: 175 and 182,  
832     cost of consumption: 101  
833 PIPELINE 275,  
834     between: 242 and 36,  
835     cost of consumption: 271  
836 PIPELINE 276,  
837     between: 247 and 217,  
838     cost of consumption: 147  
839 PIPELINE 277,  
840     between: 56 and 89,  
841     cost of consumption: 115  
842 PIPELINE 278,  
843     between: 26 and 97,  
844     cost of consumption: 891  
845 PIPELINE 279,  
846     between: 45 and 135,  
847     cost of consumption: 277  
848 PIPELINE 280,  
849     between: 56 and 56,  
850     cost of consumption: 571  
851 PIPELINE 281,  
852     between: 253 and 159,  
853     cost of consumption: 991  
854 PIPELINE 282,  
855     between: 224 and 252,  
856     cost of consumption: 955  
857 PIPELINE 283,  
858     between: 220 and 146,  
859     cost of consumption: 649  
860 PIPELINE 284,  
861     between: 238 and 65,  
862     cost of consumption: 623  
863 PIPELINE 285,  
864     between: 134 and 51,  
865     cost of consumption: 691  
866 PIPELINE 286,  
867     between: 152 and 42,  
868     cost of consumption: 284  
869 PIPELINE 287,  
870     between: 222 and 99,  
871     cost of consumption: 29  
872 PIPELINE 288,  
873     between: 212 and 125,  
874     cost of consumption: 471  
875 PIPELINE 289,  
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876        between: 18 and 170,  
877        cost of consumption: 486  
878 PIPELINE 290,  
879        between: 250 and 227,  
880        cost of consumption: 62  
881 PIPELINE 291,  
882        between: 160 and 224,  
883        cost of consumption: 221  
884 PIPELINE 292,  
885        between: 10 and 192,  
886        cost of consumption: 257  
887 PIPELINE 293,  
888        between: 17 and 156,  
889        cost of consumption: 259  
890 PIPELINE 294,  
891        between: 109 and 138,  
892        cost of consumption: 205  
893 PIPELINE 295,  
894        between: 127 and 17,  
895        cost of consumption: 928  
896 PIPELINE 296,  
897        between: 181 and 169,  
898        cost of consumption: 875  
899 PIPELINE 297,  
900        between: 196 and 136,  
901        cost of consumption: 70  
902 PIPELINE 298,  
903        between: 44 and 92,  
904        cost of consumption: 235  
905 PIPELINE 299,  
906        between: 246 and 111,  
907        cost of consumption: 598  
908 PIPELINE 300,  
909        between: 71 and 105,  
910        cost of consumption: 793  
911 PIPELINE 301,  
912        between: 208 and 10,  
913        cost of consumption: 841  
914 PIPELINE 302,  
915        between: 249 and 20,  
916        cost of consumption: 809  
917 PIPELINE 303,  
918        between: 29 and 37,  
919        cost of consumption: 429  
920 PIPELINE 304,  
921        between: 212 and 146,  
922        cost of consumption: 472  
923 PIPELINE 305,  
924        between: 204 and 17,  
925        cost of consumption: 681  
926 PIPELINE 306,  
927        between: 247 and 198,  
928        cost of consumption: 26  
929 PIPELINE 307,  
930        between: 77 and 138,  
931        cost of consumption: 650  
932 PIPELINE 308,  
933        between: 6 and 183,  
934        cost of consumption: 15  
935 PIPELINE 309,  
936        between: 61 and 173,  
937        cost of consumption: 654  
938 PIPELINE 310,  
939        between: 30 and 245,  
940        cost of consumption: 191  
941 PIPELINE 311,  
942        between: 226 and 197,  
943        cost of consumption: 841  
944 PIPELINE 312,  
945        between: 134 and 190,  
946        cost of consumption: 646  
947 PIPELINE 313,  
948        between: 234 and 220,  
949        cost of consumption: 203  
950 PIPELINE 314,  
951        between: 234 and 176,  
952        cost of consumption: 158  
953 PIPELINE 315,  
954        between: 117 and 124,  
955        cost of consumption: 479  
956 PIPELINE 316,  
957        between: 17 and 115,  
958        cost of consumption: 558  
959 PIPELINE 317,  
960        between: 87 and 193,  
961        cost of consumption: 968  
962 PIPELINE 318,  
963        between: 36 and 199,  
964        cost of consumption: 439  
965 PIPELINE 319,  
966        between: 78 and 4,  
967        cost of consumption: 789  
968 PIPELINE 320,  
969        between: 231 and 34,  
970        cost of consumption: 146  
971 PIPELINE 321,  
972        between: 234 and 4,  
973        cost of consumption: 567  
974 PIPELINE 322,  
975        between: 246 and 138,  
976        cost of consumption: 326  
977 PIPELINE 323,  
978        between: 23 and 116,  
979        cost of consumption: 322  
980 PIPELINE 324,  
981        between: 94 and 95,  
982        cost of consumption: 162  
983 PIPELINE 325,  
984        between: 55 and 212,  
985        cost of consumption: 46

986       cost of consumption: 40  
987     PIPELINE 326,  
988       between: 33 and 230,  
989       cost of consumption: 897  
990     PIPELINE 327,  
991       between: 210 and 61,  
992       cost of consumption: 938  
993     PIPELINE 328,  
994       between: 14 and 97,  
995       cost of consumption: 234  
996     PIPELINE 329,  
997       between: 0 and 176,  
998       cost of consumption: 366  
999     PIPELINE 330,  
1000      between: 160 and 151,  
1001      cost of consumption: 929  
1002     PIPELINE 331,  
1003      between: 53 and 129,  
1004      cost of consumption: 709  
1005     PIPELINE 332,  
1006      between: 144 and 120,  
1007      cost of consumption: 248  
1008     PIPELINE 333,  
1009      between: 169 and 143,  
1010      cost of consumption: 644  
1011     PIPELINE 334,  
1012      between: 158 and 237,  
1013      cost of consumption: 379  
1014     PIPELINE 335,  
1015      between: 67 and 36,  
1016      cost of consumption: 568  
1017     PIPELINE 336,  
1018      between: 100 and 70,  
1019      cost of consumption: 590  
1020     PIPELINE 337,  
1021      between: 248 and 24,  
1022      cost of consumption: 467  
1023     PIPELINE 338,  
1024      between: 78 and 38,  
1025      cost of consumption: 844  
1026     PIPELINE 339,  
1027      between: 107 and 39,  
1028      cost of consumption: 436  
1029     PIPELINE 340,  
1030      between: 140 and 199,  
1031      cost of consumption: 540  
1032     PIPELINE 341,  
1033      between: 208 and 253,  
1034      cost of consumption: 341  
1035     PIPELINE 342,  
1036      between: 25 and 141,  
1037      cost of consumption: 677  
1038     PIPELINE 343,  
1039      between: 236 and 54,  
1040      cost of consumption: 893  
1041     PIPELINE 344,  
1042      between: 51 and 212,  
1043      cost of consumption: 186  
1044     PIPELINE 345,  
1045      between: 218 and 23,  
1046      cost of consumption: 359  
1047     PIPELINE 346,  
1048      between: 85 and 123,  
1049      cost of consumption: 941  
1050     PIPELINE 347,  
1051      between: 182 and 115,  
1052      cost of consumption: 781  
1053     PIPELINE 348,  
1054      between: 84 and 193,  
1055      cost of consumption: 900  
1056     PIPELINE 349,  
1057      between: 83 and 44,  
1058      cost of consumption: 379  
1059     PIPELINE 350,  
1060      between: 3 and 185,  
1061      cost of consumption: 354  
1062     PIPELINE 351,  
1063      between: 74 and 137,  
1064      cost of consumption: 967  
1065     PIPELINE 352,  
1066      between: 18 and 162,  
1067      cost of consumption: 132  
1068     PIPELINE 353,  
1069      between: 83 and 142,  
1070      cost of consumption: 170  
1071     PIPELINE 354,  
1072      between: 35 and 194,  
1073      cost of consumption: 102  
1074     PIPELINE 355,  
1075      between: 224 and 156,  
1076      cost of consumption: 733  
1077     PIPELINE 356,  
1078      between: 194 and 241,  
1079      cost of consumption: 808  
1080     PIPELINE 357,  
1081      between: 234 and 167,  
1082      cost of consumption: 220  
1083     PIPELINE 358,  
1084      between: 43 and 251,  
1085      cost of consumption: 253  
1086     PIPELINE 359,  
1087      between: 146 and 78,  
1088      cost of consumption: 490  
1089     PIPELINE 360,  
1090      between: 32 and 81,  
1091      cost of consumption: 995  
1092     PIPELINE 361,  
1093      between: 117 and 155,  
1094      cost of consumption: 988  
1095     PIPELINE 362,

1095        between: 200 and 174,  
1096        cost of consumption: 879  
1097 PIPELINE 363,  
1098        between: 167 and 1,  
1099        cost of consumption: 557  
1100 PIPELINE 364,  
1101        between: 189 and 36,  
1102        cost of consumption: 367  
1103 PIPELINE 365,  
1104        between: 166 and 4,  
1105        cost of consumption: 683  
1106 PIPELINE 366,  
1107        between: 167 and 199,  
1108        cost of consumption: 68  
1109 PIPELINE 367,  
1110        between: 34 and 177,  
1111        cost of consumption: 107  
1112 PIPELINE 368,  
1113        between: 17 and 220,  
1114        cost of consumption: 614  
1115 PIPELINE 369,  
1116        between: 194 and 110,  
1117        cost of consumption: 781  
1118 PIPELINE 370,  
1119        between: 159 and 142,  
1120        cost of consumption: 38  
1121 PIPELINE 371,  
1122        between: 53 and 4,  
1123        cost of consumption: 274  
1124 PIPELINE 372,  
1125        between: 84 and 204,  
1126        cost of consumption: 824  
1127 PIPELINE 373,  
1128        between: 22 and 115,  
1129        cost of consumption: 361  
1130 PIPELINE 374,  
1131        between: 103 and 48,  
1132        cost of consumption: 477  
1133 PIPELINE 375,  
1134        between: 121 and 215,  
1135        cost of consumption: 1001  
1136 PIPELINE 376,  
1137        between: 40 and 126,  
1138        cost of consumption: 344  
1139 PIPELINE 377,  
1140        between: 199 and 160,  
1141        cost of consumption: 738  
1142 PIPELINE 378,  
1143        between: 14 and 178,  
1144        cost of consumption: 662  
1145 PIPELINE 379,  
1146        between: 79 and 116,  
1147        cost of consumption: 13  
1148 PIPELINE 380,  
1149        between: 223 and 19,  
1150        cost of consumption: 163  
1151 PIPELINE 381,  
1152        between: 193 and 72,  
1153        cost of consumption: 815  
1154 PIPELINE 382,  
1155        between: 62 and 156,  
1156        cost of consumption: 931  
1157 PIPELINE 383,  
1158        between: 105 and 179,  
1159        cost of consumption: 639  
1160 PIPELINE 384,  
1161        between: 149 and 26,  
1162        cost of consumption: 455  
1163 PIPELINE 385,  
1164        between: 229 and 147,  
1165        cost of consumption: 182  
1166 PIPELINE 386,  
1167        between: 57 and 187,  
1168        cost of consumption: 196  
1169 PIPELINE 387,  
1170        between: 85 and 131,  
1171        cost of consumption: 301  
1172 PIPELINE 388,  
1173        between: 34 and 145,  
1174        cost of consumption: 415  
1175 PIPELINE 389,  
1176        between: 203 and 224,  
1177        cost of consumption: 787  
1178 PIPELINE 390,  
1179        between: 227 and 192,  
1180        cost of consumption: 902  
1181 PIPELINE 391,  
1182        between: 138 and 129,  
1183        cost of consumption: 102  
1184 PIPELINE 392,  
1185        between: 52 and 191,  
1186        cost of consumption: 722  
1187 PIPELINE 393,  
1188        between: 171 and 40,  
1189        cost of consumption: 285  
1190 PIPELINE 394,  
1191        between: 149 and 189,  
1192        cost of consumption: 47  
1193 PIPELINE 395,  
1194        between: 175 and 162,  
1195        cost of consumption: 19  
1196 PIPELINE 396,  
1197        between: 161 and 219,  
1198        cost of consumption: 934  
1199 PIPELINE 397,  
1200        between: 16 and 48,  
1201        cost of consumption: 153  
1202 PIPELINE 398,  
1203        between: 32 and 82,  
1204        cost of consumption: 497

1204       cost of consumption: 404  
1205 PIPELINE 399,  
1206       between: 226 and 30,  
1207       cost of consumption: 531  
1208 PIPELINE 400,  
1209       between: 24 and 1,  
1210       cost of consumption: 427  
1211 PIPELINE 401,  
1212       between: 97 and 139,  
1213       cost of consumption: 204  
1214 PIPELINE 402,  
1215       between: 242 and 192,  
1216       cost of consumption: 835  
1217 PIPELINE 403,  
1218       between: 32 and 107,  
1219       cost of consumption: 787  
1220 PIPELINE 404,  
1221       between: 0 and 0,  
1222       cost of consumption: 768  
1223 PIPELINE 405,  
1224       between: 251 and 175,  
1225       cost of consumption: 602  
1226 PIPELINE 406,  
1227       between: 137 and 80,  
1228       cost of consumption: 285  
1229 PIPELINE 407,  
1230       between: 210 and 97,  
1231       cost of consumption: 510  
1232 PIPELINE 408,  
1233       between: 159 and 129,  
1234       cost of consumption: 360  
1235 PIPELINE 409,  
1236       between: 252 and 100,  
1237       cost of consumption: 790  
1238 PIPELINE 410,  
1239       between: 58 and 124,  
1240       cost of consumption: 512  
1241 PIPELINE 411,  
1242       between: 56 and 222,  
1243       cost of consumption: 683  
1244 PIPELINE 412,  
1245       between: 183 and 208,  
1246       cost of consumption: 115  
1247 PIPELINE 413,  
1248       between: 245 and 240,  
1249       cost of consumption: 734  
1250 PIPELINE 414,  
1251       between: 91 and 241,  
1252       cost of consumption: 174  
1253 PIPELINE 415,  
1254       between: 126 and 236,  
1255       cost of consumption: 590  
1256 PIPELINE 416,  
1257       between: 67 and 117,  
1258       cost of consumption: 158  
1259 PIPELINE 417,  
1260       between: 228 and 71,  
1261       cost of consumption: 719  
1262 PIPELINE 418,  
1263       between: 181 and 230,  
1264       cost of consumption: 921  
1265 PIPELINE 419,  
1266       between: 216 and 227,  
1267       cost of consumption: 877  
1268 PIPELINE 420,  
1269       between: 26 and 29,  
1270       cost of consumption: 665  
1271 PIPELINE 421,  
1272       between: 93 and 86,  
1273       cost of consumption: 887  
1274 PIPELINE 422,  
1275       between: 43 and 13,  
1276       cost of consumption: 288  
1277 PIPELINE 423,  
1278       between: 186 and 3,  
1279       cost of consumption: 640  
1280 PIPELINE 424,  
1281       between: 179 and 94,  
1282       cost of consumption: 225  
1283 PIPELINE 425,  
1284       between: 173 and 221,  
1285       cost of consumption: 85  
1286 PIPELINE 426,  
1287       between: 86 and 32,  
1288       cost of consumption: 234  
1289 PIPELINE 427,  
1290       between: 79 and 4,  
1291       cost of consumption: 306  
1292 PIPELINE 428,  
1293       between: 170 and 185,  
1294       cost of consumption: 744  
1295 PIPELINE 429,  
1296       between: 134 and 146,  
1297       cost of consumption: 731  
1298 PIPELINE 430,  
1299       between: 198 and 172,  
1300       cost of consumption: 793  
1301 PIPELINE 431,  
1302       between: 130 and 9,  
1303       cost of consumption: 703  
1304 PIPELINE 432,  
1305       between: 29 and 52,  
1306       cost of consumption: 308  
1307 PIPELINE 433,  
1308       between: 136 and 238,  
1309       cost of consumption: 143  
1310 PIPELINE 434,  
1311       between: 227 and 162,  
1312       cost of consumption: 638  
1313 PIPELINE 435,

1314        between: 48 and 79,  
1315        cost of consumption: 259  
1316 PIPELINE 436,  
1317        between: 104 and 165,  
1318        cost of consumption: 603  
1319 PIPELINE 437,  
1320        between: 22 and 244,  
1321        cost of consumption: 304  
1322 PIPELINE 438,  
1323        between: 11 and 158,  
1324        cost of consumption: 217  
1325 PIPELINE 439,  
1326        between: 230 and 36,  
1327        cost of consumption: 699  
1328 PIPELINE 440,  
1329        between: 165 and 234,  
1330        cost of consumption: 535  
1331 PIPELINE 441,  
1332        between: 129 and 109,  
1333        cost of consumption: 584  
1334 PIPELINE 442,  
1335        between: 179 and 138,  
1336        cost of consumption: 525  
1337 PIPELINE 443,  
1338        between: 242 and 18,  
1339        cost of consumption: 467  
1340 PIPELINE 444,  
1341        between: 53 and 245,  
1342        cost of consumption: 141  
1343 PIPELINE 445,  
1344        between: 214 and 37,  
1345        cost of consumption: 68  
1346 PIPELINE 446,  
1347        between: 84 and 142,  
1348        cost of consumption: 833  
1349 PIPELINE 447,  
1350        between: 242 and 164,  
1351        cost of consumption: 294  
1352 PIPELINE 448,  
1353        between: 149 and 175,  
1354        cost of consumption: 812  
1355 PIPELINE 449,  
1356        between: 242 and 149,  
1357        cost of consumption: 657  
1358 PIPELINE 450,  
1359        between: 224 and 58,  
1360        cost of consumption: 699  
1361 PIPELINE 451,  
1362        between: 123 and 187,  
1363        cost of consumption: 304  
1364 PIPELINE 452,  
1365        between: 30 and 110,  
1366        cost of consumption: 1002  
1367 PIPELINE 453,  
1368        between: 246 and 97,  
1369        cost of consumption: 428  
1370 PIPELINE 454,  
1371        between: 189 and 150,  
1372        cost of consumption: 218  
1373 PIPELINE 455,  
1374        between: 37 and 108,  
1375        cost of consumption: 295  
1376 PIPELINE 456,  
1377        between: 221 and 192,  
1378        cost of consumption: 741  
1379 PIPELINE 457,  
1380        between: 57 and 178,  
1381        cost of consumption: 433  
1382 PIPELINE 458,  
1383        between: 138 and 72,  
1384        cost of consumption: 376  
1385 PIPELINE 459,  
1386        between: 122 and 58,  
1387        cost of consumption: 310  
1388 PIPELINE 460,  
1389        between: 142 and 26,  
1390        cost of consumption: 960  
1391 PIPELINE 461,  
1392        between: 140 and 149,  
1393        cost of consumption: 468  
1394 PIPELINE 462,  
1395        between: 248 and 180,  
1396        cost of consumption: 234  
1397 PIPELINE 463,  
1398        between: 237 and 170,  
1399        cost of consumption: 859  
1400 PIPELINE 464,  
1401        between: 245 and 103,  
1402        cost of consumption: 185  
1403 PIPELINE 465,  
1404        between: 242 and 141,  
1405        cost of consumption: 493  
1406 PIPELINE 466,  
1407        between: 20 and 106,  
1408        cost of consumption: 741  
1409 PIPELINE 467,  
1410        between: 197 and 163,  
1411        cost of consumption: 528  
1412 PIPELINE 468,  
1413        between: 25 and 46,  
1414        cost of consumption: 504  
1415 PIPELINE 469,  
1416        between: 29 and 168,  
1417        cost of consumption: 882  
1418 PIPELINE 470,  
1419        between: 182 and 54,  
1420        cost of consumption: 708  
1421 PIPELINE 471,  
1422        between: 137 and 194,  
1423        cost of consumption: 554

1423       cost of consumption: 514  
1424 PIPELINE 472,  
1425       between: 24 and 186,  
1426       cost of consumption: 582  
1427 PIPELINE 473,  
1428       between: 22 and 168,  
1429       cost of consumption: 80  
1430 PIPELINE 474,  
1431       between: 116 and 157,  
1432       cost of consumption: 824  
1433 PIPELINE 475,  
1434       between: 105 and 143,  
1435       cost of consumption: 301  
1436 PIPELINE 476,  
1437       between: 201 and 163,  
1438       cost of consumption: 223  
1439 PIPELINE 477,  
1440       between: 234 and 104,  
1441       cost of consumption: 122  
1442 PIPELINE 478,  
1443       between: 189 and 130,  
1444       cost of consumption: 936  
1445 PIPELINE 479,  
1446       between: 216 and 159,  
1447       cost of consumption: 824  
1448 PIPELINE 480,  
1449       between: 45 and 85,  
1450       cost of consumption: 438  
1451 PIPELINE 481,  
1452       between: 156 and 222,  
1453       cost of consumption: 825  
1454 PIPELINE 482,  
1455       between: 161 and 247,  
1456       cost of consumption: 283  
1457 PIPELINE 483,  
1458       between: 90 and 13,  
1459       cost of consumption: 163  
1460 PIPELINE 484,  
1461       between: 190 and 129,  
1462       cost of consumption: 240  
1463 PIPELINE 485,  
1464       between: 137 and 234,  
1465       cost of consumption: 727  
1466 PIPELINE 486,  
1467       between: 225 and 180,  
1468       cost of consumption: 267  
1469 PIPELINE 487,  
1470       between: 163 and 158,  
1471       cost of consumption: 595  
1472 PIPELINE 488,  
1473       between: 8 and 91,  
1474       cost of consumption: 845  
1475 PIPELINE 489,  
1476       between: 156 and 51,  
1477       cost of consumption: 36  
1478 PIPELINE 490,  
1479       between: 215 and 96,  
1480       cost of consumption: 825  
1481 PIPELINE 491,  
1482       between: 73 and 252,  
1483       cost of consumption: 816  
1484 PIPELINE 492,  
1485       between: 125 and 158,  
1486       cost of consumption: 527  
1487 PIPELINE 493,  
1488       between: 107 and 248,  
1489       cost of consumption: 484  
1490 PIPELINE 494,  
1491       between: 2 and 182,  
1492       cost of consumption: 893  
1493 PIPELINE 495,  
1494       between: 53 and 63,  
1495       cost of consumption: 640  
1496 PIPELINE 496,  
1497       between: 248 and 32,  
1498       cost of consumption: 508  
1499 PIPELINE 497,  
1500       between: 94 and 195,  
1501       cost of consumption: 290  
1502 PIPELINE 498,  
1503       between: 44 and 204,  
1504       cost of consumption: 157  
1505 PIPELINE 499,  
1506       between: 125 and 104,  
1507       cost of consumption: 312  
1508 PIPELINE 500,  
1509       between: 108 and 63,  
1510       cost of consumption: 984  
1511 PIPELINE 501,  
1512       between: 177 and 136,  
1513       cost of consumption: 524  
1514 PIPELINE 502,  
1515       between: 212 and 5,  
1516       cost of consumption: 146  
1517 PIPELINE 503,  
1518       between: 238 and 113,  
1519       cost of consumption: 427  
1520 PIPELINE 504,  
1521       between: 21 and 115,  
1522       cost of consumption: 441  
1523 PIPELINE 505,  
1524       between: 189 and 168,  
1525       cost of consumption: 713  
1526 PIPELINE 506,  
1527       between: 80 and 160,  
1528       cost of consumption: 889  
1529 PIPELINE 507,  
1530       between: 151 and 254,  
1531       cost of consumption: 837  
1532 PTPFLTNF 508.

1533        between: 124 and 43,  
1534        cost of consumption: 377  
1535 PIPELINE 509,  
1536        between: 188 and 168,  
1537        cost of consumption: 145  
1538 PIPELINE 510,  
1539        between: 47 and 20,  
1540        cost of consumption: 256  
1541 PIPELINE 511,  
1542        between: 2 and 197,  
1543        cost of consumption: 201  
1544 PIPELINE 512,  
1545        between: 210 and 153,  
1546        cost of consumption: 798  
1547 PIPELINE 513,  
1548        between: 63 and 135,  
1549        cost of consumption: 327  
1550 PIPELINE 514,  
1551        between: 165 and 156,  
1552        cost of consumption: 650  
1553 PIPELINE 515,  
1554        between: 194 and 90,  
1555        cost of consumption: 651  
1556 PIPELINE 516,  
1557        between: 30 and 170,  
1558        cost of consumption: 755  
1559 PIPELINE 517,  
1560        between: 154 and 66,  
1561        cost of consumption: 226  
1562 PIPELINE 518,  
1563        between: 218 and 190,  
1564        cost of consumption: 5  
1565 PIPELINE 519,  
1566        between: 230 and 123,  
1567        cost of consumption: 933  
1568 PIPELINE 520,  
1569        between: 90 and 170,  
1570        cost of consumption: 393  
1571 PIPELINE 521,  
1572        between: 14 and 173,  
1573        cost of consumption: 207  
1574 PIPELINE 522,  
1575        between: 74 and 127,  
1576        cost of consumption: 536  
1577 PIPELINE 523,  
1578        between: 139 and 190,  
1579        cost of consumption: 256  
1580 PIPELINE 524,  
1581        between: 62 and 100,  
1582        cost of consumption: 492  
1583 PIPELINE 525,  
1584        between: 99 and 38,  
1585        cost of consumption: 486  
1586 PIPELINE 526,  
1587        between: 49 and 68,  
1588        cost of consumption: 225  
1589 PIPELINE 527,  
1590        between: 160 and 222,  
1591        cost of consumption: 563  
1592 PIPELINE 528,  
1593        between: 13 and 185,  
1594        cost of consumption: 433  
1595 PIPELINE 529,  
1596        between: 165 and 159,  
1597        cost of consumption: 44  
1598 PIPELINE 530,  
1599        between: 229 and 250,  
1600        cost of consumption: 703  
1601 PIPELINE 531,  
1602        between: 57 and 8,  
1603        cost of consumption: 36  
1604 PIPELINE 532,  
1605        between: 83 and 82,  
1606        cost of consumption: 619  
1607 PIPELINE 533,  
1608        between: 7 and 221,  
1609        cost of consumption: 537  
1610 PIPELINE 534,  
1611        between: 66 and 27,  
1612        cost of consumption: 269  
1613 PIPELINE 535,  
1614        between: 25 and 127,  
1615        cost of consumption: 251  
1616 PIPELINE 536,  
1617        between: 75 and 176,  
1618        cost of consumption: 543  
1619 PIPELINE 537,  
1620        between: 39 and 80,  
1621        cost of consumption: 678  
1622 PIPELINE 538,  
1623        between: 69 and 93,  
1624        cost of consumption: 191  
1625 PIPELINE 539,  
1626        between: 33 and 2,  
1627        cost of consumption: 806  
1628 PIPELINE 540,  
1629        between: 121 and 231,  
1630        cost of consumption: 312  
1631 PIPELINE 541,  
1632        between: 123 and 33,  
1633        cost of consumption: 664  
1634 PIPELINE 542,  
1635        between: 42 and 116,  
1636        cost of consumption: 58  
1637 PIPELINE 543,  
1638        between: 88 and 123,  
1639        cost of consumption: 640  
1640 PIPELINE 544,  
1641        between: 68 and 189,

1642 cost of consumption: 731  
1643 PIPELINE 545,  
1644 between: 149 and 215,  
1645 cost of consumption: 682  
1646 PIPELINE 546,  
1647 between: 11 and 34,  
1648 cost of consumption: 787  
1649 PIPELINE 547,  
1650 between: 198 and 73,  
1651 cost of consumption: 147  
1652 PIPELINE 548,  
1653 between: 95 and 142,  
1654 cost of consumption: 337  
1655 PIPELINE 549,  
1656 between: 177 and 175,  
1657 cost of consumption: 1003  
1658 PIPELINE 550,  
1659 between: 162 and 40,  
1660 cost of consumption: 427  
1661 PIPELINE 551,  
1662 between: 142 and 163,  
1663 cost of consumption: 348  
1664 PIPELINE 552,  
1665 between: 129 and 205,  
1666 cost of consumption: 320  
1667 PIPELINE 553,  
1668 between: 199 and 37,  
1669 cost of consumption: 524  
1670 PIPELINE 554,  
1671 between: 234 and 106,  
1672 cost of consumption: 265  
1673 PIPELINE 555,  
1674 between: 40 and 255,  
1675 cost of consumption: 328  
1676 PIPELINE 556,  
1677 between: 230 and 10,  
1678 cost of consumption: 898  
1679 PIPELINE 557,  
1680 between: 84 and 208,  
1681 cost of consumption: 843  
1682 PIPELINE 558,  
1683 between: 18 and 47,  
1684 cost of consumption: 777  
1685 PIPELINE 559,  
1686 between: 46 and 224,  
1687 cost of consumption: 425  
1688 PIPELINE 560,  
1689 between: 77 and 131,  
1690 cost of consumption: 529  
1691 PIPELINE 561,  
1692 between: 83 and 17,  
1693 cost of consumption: 141  
1694 PIPELINE 562,  
1695 between: 122 and 146,  
1696 cost of consumption: 938  
1697 PIPELINE 563,  
1698 between: 21 and 89,  
1699 cost of consumption: 888  
1700 PIPELINE 564,  
1701 between: 44 and 67,  
1702 cost of consumption: 874  
1703 PIPELINE 565,  
1704 between: 1 and 108,  
1705 cost of consumption: 161  
1706 PIPELINE 566,  
1707 between: 172 and 82,  
1708 cost of consumption: 699  
1709 PIPELINE 567,  
1710 between: 122 and 166,  
1711 cost of consumption: 28  
1712 PIPELINE 568,  
1713 between: 144 and 184,  
1714 cost of consumption: 115  
1715 PIPELINE 569,  
1716 between: 53 and 231,  
1717 cost of consumption: 204  
1718 PIPELINE 570,  
1719 between: 137 and 52,  
1720 cost of consumption: 743  
1721 PIPELINE 571,  
1722 between: 5 and 135,  
1723 cost of consumption: 392  
1724 PIPELINE 572,  
1725 between: 37 and 1,  
1726 cost of consumption: 458  
1727 PIPELINE 573,  
1728 between: 19 and 22,  
1729 cost of consumption: 700  
1730 PIPELINE 574,  
1731 between: 38 and 67,  
1732 cost of consumption: 399  
1733 PIPELINE 575,  
1734 between: 163 and 68,  
1735 cost of consumption: 635  
1736 PIPELINE 576,  
1737 between: 31 and 240,  
1738 cost of consumption: 85  
1739 PIPELINE 577,  
1740 between: 165 and 106,  
1741 cost of consumption: 235  
1742 PIPELINE 578,  
1743 between: 252 and 251,  
1744 cost of consumption: 876  
1745 PIPELINE 579,  
1746 between: 131 and 48,  
1747 cost of consumption: 339  
1748 PIPELINE 580,  
1749 between: 234 and 185,  
1750 cost of consumption: 975  
1751 DTDFTNFSR1

1751 PIPELINE 501,  
1752     between: 212 and 190,  
1753     cost of consumption: 558  
1754 PIPELINE 582,  
1755     between: 207 and 228,  
1756     cost of consumption: 431  
1757 PIPELINE 583,  
1758     between: 92 and 247,  
1759     cost of consumption: 261  
1760 PIPELINE 584,  
1761     between: 67 and 29,  
1762     cost of consumption: 568  
1763 PIPELINE 585,  
1764     between: 110 and 192,  
1765     cost of consumption: 964  
1766 PIPELINE 586,  
1767     between: 4 and 223,  
1768     cost of consumption: 421  
1769 PIPELINE 587,  
1770     between: 237 and 132,  
1771     cost of consumption: 183  
1772 PIPELINE 588,  
1773     between: 123 and 129,  
1774     cost of consumption: 794  
1775 PIPELINE 589,  
1776     between: 194 and 4,  
1777     cost of consumption: 322  
1778 PIPELINE 590,  
1779     between: 240 and 238,  
1780     cost of consumption: 539  
1781 PIPELINE 591,  
1782     between: 82 and 194,  
1783     cost of consumption: 674  
1784 PIPELINE 592,  
1785     between: 59 and 145,  
1786     cost of consumption: 862  
1787 PIPELINE 593,  
1788     between: 37 and 237,  
1789     cost of consumption: 685  
1790 PIPELINE 594,  
1791     between: 38 and 49,  
1792     cost of consumption: 378  
1793 PIPELINE 595,  
1794     between: 105 and 159,  
1795     cost of consumption: 162  
1796 PIPELINE 596,  
1797     between: 241 and 163,  
1798     cost of consumption: 193  
1799 PIPELINE 597,  
1800     between: 105 and 144,  
1801     cost of consumption: 869  
1802 PIPELINE 598,  
1803     between: 75 and 12,  
1804     cost of consumption: 862  
1805 PIPELINE 599,  
1806     between: 41 and 206,  
1807     cost of consumption: 634  
1808 PIPELINE 600,  
1809     between: 54 and 191,  
1810     cost of consumption: 736  
1811 PIPELINE 601,  
1812     between: 253 and 17,  
1813     cost of consumption: 258  
1814 PIPELINE 602,  
1815     between: 130 and 77,  
1816     cost of consumption: 235  
1817 PIPELINE 603,  
1818     between: 235 and 114,  
1819     cost of consumption: 825  
1820 PIPELINE 604,  
1821     between: 75 and 152,  
1822     cost of consumption: 722  
1823 PIPELINE 605,  
1824     between: 200 and 2,  
1825     cost of consumption: 969  
1826 PIPELINE 606,  
1827     between: 5 and 243,  
1828     cost of consumption: 900  
1829 PIPELINE 607,  
1830     between: 33 and 92,  
1831     cost of consumption: 245  
1832 PIPELINE 608,  
1833     between: 193 and 167,  
1834     cost of consumption: 233  
1835 PIPELINE 609,  
1836     between: 227 and 208,  
1837     cost of consumption: 439  
1838 PIPELINE 610,  
1839     between: 8 and 7,  
1840     cost of consumption: 198  
1841 PIPELINE 611,  
1842     between: 28 and 4,  
1843     cost of consumption: 480  
1844 PIPELINE 612,  
1845     between: 241 and 134,  
1846     cost of consumption: 837  
1847 PIPELINE 613,  
1848     between: 88 and 113,  
1849     cost of consumption: 399  
1850 PIPELINE 614,  
1851     between: 172 and 188,  
1852     cost of consumption: 776  
1853 PIPELINE 615,  
1854     between: 49 and 132,  
1855     cost of consumption: 178  
1856 PIPELINE 616,  
1857     between: 85 and 137,  
1858     cost of consumption: 269  
1859 PIPELINE 617,  
1860     between: 28 and 170,

1861 cost of consumption: 465  
1862 PIPELINE 618,  
1863 between: 116 and 107,  
1864 cost of consumption: 648  
1865 PIPELINE 619,  
1866 between: 216 and 78,  
1867 cost of consumption: 905  
1868 PIPELINE 620,  
1869 between: 11 and 87,  
1870 cost of consumption: 256  
1871 PIPELINE 621,  
1872 between: 252 and 115,  
1873 cost of consumption: 236  
1874 PIPELINE 622,  
1875 between: 255 and 100,  
1876 cost of consumption: 218  
1877 PIPELINE 623,  
1878 between: 79 and 188,  
1879 cost of consumption: 707  
1880 PIPELINE 624,  
1881 between: 18 and 104,  
1882 cost of consumption: 735  
1883 PIPELINE 625,  
1884 between: 109 and 153,  
1885 cost of consumption: 675  
1886 PIPELINE 626,  
1887 between: 202 and 238,  
1888 cost of consumption: 36  
1889 PIPELINE 627,  
1890 between: 26 and 11,  
1891 cost of consumption: 358  
1892 PIPELINE 628,  
1893 between: 198 and 127,  
1894 cost of consumption: 505  
1895 PIPELINE 629,  
1896 between: 25 and 88,  
1897 cost of consumption: 40  
1898 PIPELINE 630,  
1899 between: 61 and 99,  
1900 cost of consumption: 239  
1901 PIPELINE 631,  
1902 between: 104 and 95,  
1903 cost of consumption: 834  
1904 PIPELINE 632,  
1905 between: 151 and 95,  
1906 cost of consumption: 782  
1907 PIPELINE 633,  
1908 between: 76 and 174,  
1909 cost of consumption: 315  
1910 PIPELINE 634,  
1911 between: 114 and 192,  
1912 cost of consumption: 251  
1913 PIPELINE 635,  
1914 between: 84 and 45,  
1915 cost of consumption: 309  
1916 PIPELINE 636,  
1917 between: 186 and 247,  
1918 cost of consumption: 155  
1919 PIPELINE 637,  
1920 between: 169 and 17,  
1921 cost of consumption: 38  
1922 PIPELINE 638,  
1923 between: 66 and 215,  
1924 cost of consumption: 494  
1925 PIPELINE 639,  
1926 between: 71 and 241,  
1927 cost of consumption: 454  
1928 PIPELINE 640,  
1929 between: 154 and 46,  
1930 cost of consumption: 705  
1931 PIPELINE 641,  
1932 between: 68 and 151,  
1933 cost of consumption: 792  
1934 PIPELINE 642,  
1935 between: 97 and 46,  
1936 cost of consumption: 487  
1937 PIPELINE 643,  
1938 between: 226 and 123,  
1939 cost of consumption: 678  
1940 PIPELINE 644,  
1941 between: 32 and 237,  
1942 cost of consumption: 758  
1943 PIPELINE 645,  
1944 between: 199 and 66,  
1945 cost of consumption: 500  
1946 PIPELINE 646,  
1947 between: 7 and 252,  
1948 cost of consumption: 75  
1949 PIPELINE 647,  
1950 between: 53 and 166,  
1951 cost of consumption: 453  
1952 PIPELINE 648,  
1953 between: 111 and 232,  
1954 cost of consumption: 92  
1955 PIPELINE 649,  
1956 between: 40 and 47,  
1957 cost of consumption: 989  
1958 PIPELINE 650,  
1959 between: 57 and 201,  
1960 cost of consumption: 692  
1961 PIPELINE 651,  
1962 between: 173 and 13,  
1963 cost of consumption: 155  
1964 PIPELINE 652,  
1965 between: 128 and 110,  
1966 cost of consumption: 257  
1967 PIPELINE 653,  
1968 between: 179 and 81,  
1969 cost of consumption: 564

1970 PIPELINE 654,  
1971     between: 148 and 113,  
1972         cost of consumption: 778  
1973 PIPELINE 655,  
1974     between: 53 and 56,  
1975         cost of consumption: 980  
1976 PIPELINE 656,  
1977     between: 4 and 63,  
1978         cost of consumption: 488  
1979 PIPELINE 657,  
1980     between: 203 and 117,  
1981         cost of consumption: 686  
1982 PIPELINE 658,  
1983     between: 163 and 228,  
1984         cost of consumption: 927  
1985 PIPELINE 659,  
1986     between: 82 and 12,  
1987         cost of consumption: 414  
1988 PIPELINE 660,  
1989     between: 243 and 69,  
1990         cost of consumption: 832  
1991 PIPELINE 661,  
1992     between: 194 and 242,  
1993         cost of consumption: 765  
1994 PIPELINE 662,  
1995     between: 40 and 114,  
1996         cost of consumption: 396  
1997 PIPELINE 663,  
1998     between: 188 and 37,  
1999         cost of consumption: 853  
2000 PIPELINE 664,  
2001     between: 204 and 185,  
2002         cost of consumption: 94  
2003 PIPELINE 665,  
2004     between: 201 and 239,  
2005         cost of consumption: 719  
2006 PIPELINE 666,  
2007     between: 8 and 243,  
2008         cost of consumption: 382  
2009 PIPELINE 667,  
2010     between: 67 and 190,  
2011         cost of consumption: 587  
2012 PIPELINE 668,  
2013     between: 37 and 97,  
2014         cost of consumption: 15  
2015 PIPELINE 669,  
2016     between: 239 and 180,  
2017         cost of consumption: 507  
2018 PIPELINE 670,  
2019     between: 232 and 167,  
2020         cost of consumption: 864  
2021 PIPELINE 671,  
2022     between: 171 and 105,  
2023         cost of consumption: 138  
2024 PIPELINE 672,  
2025     between: 124 and 145,  
2026         cost of consumption: 117  
2027 PIPELINE 673,  
2028     between: 187 and 77,  
2029         cost of consumption: 282  
2030 PIPELINE 674,  
2031     between: 75 and 25,  
2032         cost of consumption: 660  
2033 PIPELINE 675,  
2034     between: 76 and 226,  
2035         cost of consumption: 1003  
2036 PIPELINE 676,  
2037     between: 134 and 234,  
2038         cost of consumption: 158  
2039 PIPELINE 677,  
2040     between: 0 and 46,  
2041         cost of consumption: 197  
2042 PIPELINE 678,  
2043     between: 238 and 83,  
2044         cost of consumption: 270  
2045 PIPELINE 679,  
2046     between: 193 and 66,  
2047         cost of consumption: 114  
2048 PIPELINE 680,  
2049     between: 159 and 42,  
2050         cost of consumption: 417  
2051 PIPELINE 681,  
2052     between: 195 and 214,  
2053         cost of consumption: 866  
2054 PIPELINE 682,  
2055     between: 216 and 82,  
2056         cost of consumption: 963  
2057 PIPELINE 683,  
2058     between: 96 and 13,  
2059         cost of consumption: 609  
2060 PIPELINE 684,  
2061     between: 14 and 88,  
2062         cost of consumption: 418  
2063 PIPELINE 685,  
2064     between: 117 and 164,  
2065         cost of consumption: 461  
2066 PIPELINE 686,  
2067     between: 203 and 43,  
2068         cost of consumption: 767  
2069 PIPELINE 687,  
2070     between: 20 and 43,  
2071         cost of consumption: 469  
2072 PIPELINE 688,  
2073     between: 28 and 25,  
2074         cost of consumption: 248  
2075 PIPELINE 689,  
2076     between: 134 and 218,  
2077         cost of consumption: 82  
2078 PIPELINE 690,  
2079     between: 163 and 122,

2080 cost of consumption: 677  
2081 PIPELINE 691,  
2082 between: 104 and 61,  
2083 cost of consumption: 211  
2084 PIPELINE 692,  
2085 between: 149 and 21,  
2086 cost of consumption: 149  
2087 PIPELINE 693,  
2088 between: 84 and 118,  
2089 cost of consumption: 882  
2090 PIPELINE 694,  
2091 between: 96 and 132,  
2092 cost of consumption: 906  
2093 PIPELINE 695,  
2094 between: 133 and 249,  
2095 cost of consumption: 366  
2096 PIPELINE 696,  
2097 between: 141 and 196,  
2098 cost of consumption: 273  
2099 PIPELINE 697,  
2100 between: 128 and 216,  
2101 cost of consumption: 412  
2102 PIPELINE 698,  
2103 between: 160 and 245,  
2104 cost of consumption: 662  
2105 PIPELINE 699,  
2106 between: 20 and 123,  
2107 cost of consumption: 384  
2108 PIPELINE 700,  
2109 between: 201 and 30,  
2110 cost of consumption: 434  
2111 PIPELINE 701,  
2112 between: 169 and 134,  
2113 cost of consumption: 23  
2114 PIPELINE 702,  
2115 between: 95 and 28,  
2116 cost of consumption: 285  
2117 PIPELINE 703,  
2118 between: 103 and 112,  
2119 cost of consumption: 683  
2120 PIPELINE 704,  
2121 between: 124 and 208,  
2122 cost of consumption: 495  
2123 PIPELINE 705,  
2124 between: 233 and 85,  
2125 cost of consumption: 376  
2126 PIPELINE 706,  
2127 between: 251 and 227,  
2128 cost of consumption: 324  
2129 PIPELINE 707,  
2130 between: 55 and 99,  
2131 cost of consumption: 844  
2132 PIPELINE 708,  
2133 between: 159 and 3,  
2134 cost of consumption: 129  
2135 PIPELINE 709,  
2136 between: 32 and 23,  
2137 cost of consumption: 796  
2138 PIPELINE 710,  
2139 between: 123 and 225,  
2140 cost of consumption: 955  
2141 PIPELINE 711,  
2142 between: 81 and 138,  
2143 cost of consumption: 17  
2144 PIPELINE 712,  
2145 between: 99 and 234,  
2146 cost of consumption: 845  
2147 PIPELINE 713,  
2148 between: 139 and 81,  
2149 cost of consumption: 101  
2150 PIPELINE 714,  
2151 between: 41 and 206,  
2152 cost of consumption: 37  
2153 PIPELINE 715,  
2154 between: 75 and 183,  
2155 cost of consumption: 67  
2156 PIPELINE 716,  
2157 between: 102 and 178,  
2158 cost of consumption: 350  
2159 PIPELINE 717,  
2160 between: 69 and 234,  
2161 cost of consumption: 649  
2162 PIPELINE 718,  
2163 between: 253 and 137,  
2164 cost of consumption: 428  
2165 PIPELINE 719,  
2166 between: 169 and 169,  
2167 cost of consumption: 284  
2168 PIPELINE 720,  
2169 between: 209 and 36,  
2170 cost of consumption: 941  
2171 PIPELINE 721,  
2172 between: 23 and 117,  
2173 cost of consumption: 775  
2174 PIPELINE 722,  
2175 between: 227 and 217,  
2176 cost of consumption: 993  
2177 PIPELINE 723,  
2178 between: 204 and 100,  
2179 cost of consumption: 739  
2180 PIPELINE 724,  
2181 between: 36 and 142,  
2182 cost of consumption: 241  
2183 PIPELINE 725,  
2184 between: 77 and 217,  
2185 cost of consumption: 752  
2186 PIPELINE 726,  
2187 between: 203 and 64,  
2188 cost of consumption: 635  
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2189 PIPELINE 727,  
2190     between: 44 and 133,  
2191     cost of consumption: 509  
2192 PIPELINE 728,  
2193     between: 240 and 130,  
2194     cost of consumption: 782  
2195 PIPELINE 729,  
2196     between: 183 and 44,  
2197     cost of consumption: 463  
2198 PIPELINE 730,  
2199     between: 150 and 253,  
2200     cost of consumption: 579  
2201 PIPELINE 731,  
2202     between: 86 and 20,  
2203     cost of consumption: 265  
2204 PIPELINE 732,  
2205     between: 161 and 247,  
2206     cost of consumption: 186  
2207 PIPELINE 733,  
2208     between: 213 and 195,  
2209     cost of consumption: 326  
2210 PIPELINE 734,  
2211     between: 91 and 232,  
2212     cost of consumption: 364  
2213 PIPELINE 735,  
2214     between: 175 and 53,  
2215     cost of consumption: 142  
2216 PIPELINE 736,  
2217     between: 187 and 0,  
2218     cost of consumption: 382  
2219 PIPELINE 737,  
2220     between: 121 and 44,  
2221     cost of consumption: 51  
2222 PIPELINE 738,  
2223     between: 33 and 28,  
2224     cost of consumption: 342  
2225 PIPELINE 739,  
2226     between: 82 and 211,  
2227     cost of consumption: 730  
2228 PIPELINE 740,  
2229     between: 44 and 106,  
2230     cost of consumption: 303  
2231 PIPELINE 741,  
2232     between: 42 and 192,  
2233     cost of consumption: 715  
2234 PIPELINE 742,  
2235     between: 158 and 97,  
2236     cost of consumption: 626  
2237 PIPELINE 743,  
2238     between: 235 and 55,  
2239     cost of consumption: 582  
2240 PIPELINE 744,  
2241     between: 157 and 146,  
2242     cost of consumption: 326  
2243 PIPELINE 745,  
2244     between: 220 and 66,  
2245     cost of consumption: 243  
2246 PIPELINE 746,  
2247     between: 245 and 253,  
2248     cost of consumption: 395  
2249 PIPELINE 747,  
2250     between: 78 and 118,  
2251     cost of consumption: 831  
2252 PIPELINE 748,  
2253     between: 45 and 151,  
2254     cost of consumption: 843  
2255 PIPELINE 749,  
2256     between: 142 and 233,  
2257     cost of consumption: 910  
2258 PIPELINE 750,  
2259     between: 27 and 21,  
2260     cost of consumption: 608  
2261 PIPELINE 751,  
2262     between: 165 and 63,  
2263     cost of consumption: 929  
2264 PIPELINE 752,  
2265     between: 67 and 222,  
2266     cost of consumption: 642  
2267 PIPELINE 753,  
2268     between: 216 and 201,  
2269     cost of consumption: 385  
2270 PIPELINE 754,  
2271     between: 49 and 102,  
2272     cost of consumption: 596  
2273 PIPELINE 755,  
2274     between: 114 and 67,  
2275     cost of consumption: 510  
2276 PIPELINE 756,  
2277     between: 232 and 56,  
2278     cost of consumption: 875  
2279 PIPELINE 757,  
2280     between: 94 and 135,  
2281     cost of consumption: 25  
2282 PIPELINE 758,  
2283     between: 0 and 180,  
2284     cost of consumption: 464  
2285 PIPELINE 759,  
2286     between: 190 and 66,  
2287     cost of consumption: 321  
2288 PIPELINE 760,  
2289     between: 80 and 93,  
2290     cost of consumption: 406  
2291 PIPELINE 761,  
2292     between: 75 and 2,  
2293     cost of consumption: 589  
2294 PIPELINE 762,  
2295     between: 7 and 69,  
2296     cost of consumption: 187  
2297 PIPELINE 763,  
2298     between: 37 and 29

2299        between: 3, and 22,  
2300        cost of consumption: 381  
2301        PIPELINE 764,  
2302             between: 121 and 79,  
2303             cost of consumption: 843  
2304        PIPELINE 765,  
2305             between: 96 and 193,  
2306             cost of consumption: 286  
2307        PIPELINE 766,  
2308             between: 137 and 170,  
2309             cost of consumption: 847  
2310        PIPELINE 767,  
2311             between: 175 and 8,  
2312             cost of consumption: 606  
2313        PIPELINE 768,  
2314             between: 75 and 9,  
2315             cost of consumption: 610  
2316        PIPELINE 769,  
2317             between: 126 and 199,  
2318             cost of consumption: 196  
2319        PIPELINE 770,  
2320             between: 154 and 23,  
2321             cost of consumption: 793  
2322        PIPELINE 771,  
2323             between: 203 and 99,  
2324             cost of consumption: 995  
2325        PIPELINE 772,  
2326             between: 60 and 106,  
2327             cost of consumption: 568  
2328        PIPELINE 773,  
2329             between: 138 and 143,  
2330             cost of consumption: 133  
2331        PIPELINE 774,  
2332             between: 162 and 9,  
2333             cost of consumption: 620  
2334        PIPELINE 775,  
2335             between: 33 and 105,  
2336             cost of consumption: 702  
2337        PIPELINE 776,  
2338             between: 226 and 243,  
2339             cost of consumption: 264  
2340        PIPELINE 777,  
2341             between: 220 and 162,  
2342             cost of consumption: 752  
2343        PIPELINE 778,  
2344             between: 93 and 238,  
2345             cost of consumption: 641  
2346        PIPELINE 779,  
2347             between: 146 and 108,  
2348             cost of consumption: 769  
2349        PIPELINE 780,  
2350             between: 9 and 7,  
2351             cost of consumption: 392  
2352        PIPELINE 781,  
2353             between: 221 and 210,  
2354             cost of consumption: 467  
2355        PIPELINE 782,  
2356             between: 179 and 14,  
2357             cost of consumption: 918  
2358        PIPELINE 783,  
2359             between: 206 and 153,  
2360             cost of consumption: 381  
2361        PIPELINE 784,  
2362             between: 7 and 59,  
2363             cost of consumption: 590  
2364        PIPELINE 785,  
2365             between: 142 and 92,  
2366             cost of consumption: 488  
2367        PIPELINE 786,  
2368             between: 215 and 63,  
2369             cost of consumption: 579  
2370        PIPELINE 787,  
2371             between: 202 and 27,  
2372             cost of consumption: 733  
2373        PIPELINE 788,  
2374             between: 198 and 121,  
2375             cost of consumption: 27  
2376        PIPELINE 789,  
2377             between: 202 and 11,  
2378             cost of consumption: 568  
2379        PIPELINE 790,  
2380             between: 150 and 21,  
2381             cost of consumption: 375  
2382        PIPELINE 791,  
2383             between: 122 and 242,  
2384             cost of consumption: 849  
2385        PIPELINE 792,  
2386             between: 192 and 166,  
2387             cost of consumption: 928  
2388        PIPELINE 793,  
2389             between: 113 and 116,  
2390             cost of consumption: 793  
2391        PIPELINE 794,  
2392             between: 178 and 123,  
2393             cost of consumption: 172  
2394        PIPELINE 795,  
2395             between: 251 and 10,  
2396             cost of consumption: 609  
2397        PIPELINE 796,  
2398             between: 174 and 225,  
2399             cost of consumption: 32  
2400        PIPELINE 797,  
2401             between: 84 and 172,  
2402             cost of consumption: 987  
2403        PIPELINE 798,  
2404             between: 157 and 114,  
2405             cost of consumption: 724  
2406        PIPELINE 799,  
2407             between: 211 and 60,  
                cost of consumption: 552

2408 PIPELINE 800,  
2409     between: 118 and 211,  
2410     cost of consumption: 13  
2411 PIPELINE 801,  
2412     between: 32 and 77,  
2413     cost of consumption: 543  
2414 PIPELINE 802,  
2415     between: 157 and 13,  
2416     cost of consumption: 837  
2417 PIPELINE 803,  
2418     between: 40 and 127,  
2419     cost of consumption: 458  
2420 PIPELINE 804,  
2421     between: 76 and 49,  
2422     cost of consumption: 885  
2423 PIPELINE 805,  
2424     between: 171 and 44,  
2425     cost of consumption: 87  
2426 PIPELINE 806,  
2427     between: 103 and 219,  
2428     cost of consumption: 761  
2429 PIPELINE 807,  
2430     between: 98 and 47,  
2431     cost of consumption: 517  
2432 PIPELINE 808,  
2433     between: 121 and 204,  
2434     cost of consumption: 103  
2435 PIPELINE 809,  
2436     between: 8 and 160,  
2437     cost of consumption: 507  
2438 PIPELINE 810,  
2439     between: 163 and 22,  
2440     cost of consumption: 790  
2441 PIPELINE 811,  
2442     between: 83 and 55,  
2443     cost of consumption: 747  
2444 PIPELINE 812,  
2445     between: 246 and 212,  
2446     cost of consumption: 137  
2447 PIPELINE 813,  
2448     between: 62 and 252,  
2449     cost of consumption: 576  
2450 PIPELINE 814,  
2451     between: 251 and 72,  
2452     cost of consumption: 441  
2453 PIPELINE 815,  
2454     between: 52 and 243,  
2455     cost of consumption: 317  
2456 PIPELINE 816,  
2457     between: 118 and 91,  
2458     cost of consumption: 392  
2459 PIPELINE 817,  
2460     between: 154 and 189,  
2461     cost of consumption: 536  
2462 PIPELINE 818,  
2463     between: 106 and 54,  
2464     cost of consumption: 180  
2465 PIPELINE 819,  
2466     between: 172 and 63,  
2467     cost of consumption: 700  
2468 PIPELINE 820,  
2469     between: 43 and 226,  
2470     cost of consumption: 307  
2471 PIPELINE 821,  
2472     between: 124 and 54,  
2473     cost of consumption: 74  
2474 PIPELINE 822,  
2475     between: 27 and 44,  
2476     cost of consumption: 198  
2477 PIPELINE 823,  
2478     between: 199 and 106,  
2479     cost of consumption: 602  
2480 PIPELINE 824,  
2481     between: 242 and 102,  
2482     cost of consumption: 722  
2483 PIPELINE 825,  
2484     between: 78 and 154,  
2485     cost of consumption: 781  
2486 PIPELINE 826,  
2487     between: 214 and 16,  
2488     cost of consumption: 32  
2489 PIPELINE 827,  
2490     between: 58 and 171,  
2491     cost of consumption: 854  
2492 PIPELINE 828,  
2493     between: 205 and 21,  
2494     cost of consumption: 876  
2495 PIPELINE 829,  
2496     between: 44 and 194,  
2497     cost of consumption: 523  
2498 PIPELINE 830,  
2499     between: 44 and 237,  
2500     cost of consumption: 694  
2501 PIPELINE 831,  
2502     between: 66 and 105,  
2503     cost of consumption: 396  
2504 PIPELINE 832,  
2505     between: 143 and 132,  
2506     cost of consumption: 168  
2507 PIPELINE 833,  
2508     between: 176 and 75,  
2509     cost of consumption: 898  
2510 PIPELINE 834,  
2511     between: 205 and 61,  
2512     cost of consumption: 688  
2513 PIPELINE 835,  
2514     between: 50 and 139,  
2515     cost of consumption: 770  
2516 PIPELINE 836,  
2517     between: 129 and 80

2517        between: 150 and 70,  
2518        cost of consumption: 579  
2519        PIPELINE 837,  
2520            between: 62 and 156,  
2521            cost of consumption: 574  
2522        PIPELINE 838,  
2523            between: 175 and 105,  
2524            cost of consumption: 267  
2525        PIPELINE 839,  
2526            between: 86 and 149,  
2527            cost of consumption: 109  
2528        PIPELINE 840,  
2529            between: 61 and 193,  
2530            cost of consumption: 250  
2531        PIPELINE 841,  
2532            between: 6 and 3,  
2533            cost of consumption: 180  
2534        PIPELINE 842,  
2535            between: 5 and 146,  
2536            cost of consumption: 992  
2537        PIPELINE 843,  
2538            between: 48 and 66,  
2539            cost of consumption: 468  
2540        PIPELINE 844,  
2541            between: 197 and 15,  
2542            cost of consumption: 881  
2543        PIPELINE 845,  
2544            between: 193 and 65,  
2545            cost of consumption: 669  
2546        PIPELINE 846,  
2547            between: 86 and 204,  
2548            cost of consumption: 495  
2549        PIPELINE 847,  
2550            between: 252 and 10,  
2551            cost of consumption: 99  
2552        PIPELINE 848,  
2553            between: 77 and 185,  
2554            cost of consumption: 660  
2555        PIPELINE 849,  
2556            between: 180 and 15,  
2557            cost of consumption: 705  
2558        PIPELINE 850,  
2559            between: 220 and 76,  
2560            cost of consumption: 931  
2561        PIPELINE 851,  
2562            between: 242 and 82,  
2563            cost of consumption: 342  
2564        PIPELINE 852,  
2565            between: 113 and 87,  
2566            cost of consumption: 657  
2567        PIPELINE 853,  
2568            between: 116 and 135,  
2569            cost of consumption: 771  
2570        PIPELINE 854,  
2571            between: 195 and 77,  
2572            cost of consumption: 283  
2573        PIPELINE 855,  
2574            between: 80 and 14,  
2575            cost of consumption: 260  
2576        PIPELINE 856,  
2577            between: 104 and 100,  
2578            cost of consumption: 480  
2579        PIPELINE 857,  
2580            between: 226 and 97,  
2581            cost of consumption: 322  
2582        PIPELINE 858,  
2583            between: 248 and 174,  
2584            cost of consumption: 283  
2585        PIPELINE 859,  
2586            between: 119 and 98,  
2587            cost of consumption: 291  
2588        PIPELINE 860,  
2589            between: 139 and 63,  
2590            cost of consumption: 159  
2591        PIPELINE 861,  
2592            between: 97 and 49,  
2593            cost of consumption: 634  
2594        PIPELINE 862,  
2595            between: 59 and 162,  
2596            cost of consumption: 401  
2597        PIPELINE 863,  
2598            between: 167 and 22,  
2599            cost of consumption: 681  
2600        PIPELINE 864,  
2601            between: 85 and 218,  
2602            cost of consumption: 14  
2603        PIPELINE 865,  
2604            between: 19 and 42,  
2605            cost of consumption: 84  
2606        PIPELINE 866,  
2607            between: 19 and 146,  
2608            cost of consumption: 656  
2609        PIPELINE 867,  
2610            between: 222 and 116,  
2611            cost of consumption: 361  
2612        PIPELINE 868,  
2613            between: 180 and 108,  
2614            cost of consumption: 416  
2615        PIPELINE 869,  
2616            between: 66 and 227,  
2617            cost of consumption: 434  
2618        PIPELINE 870,  
2619            between: 224 and 110,  
2620            cost of consumption: 521  
2621        PIPELINE 871,  
2622            between: 203 and 208,  
2623            cost of consumption: 922  
2624        PIPELINE 872,  
2625            between: 8 and 11,  
2626            cost of consumption: 516

2627 PIPELINE 873,  
2628     between: 156 and 178,  
2629     cost of consumption: 291  
2630 PIPELINE 874,  
2631     between: 184 and 7,  
2632     cost of consumption: 709  
2633 PIPELINE 875,  
2634     between: 33 and 27,  
2635     cost of consumption: 351  
2636 PIPELINE 876,  
2637     between: 152 and 46,  
2638     cost of consumption: 529  
2639 PIPELINE 877,  
2640     between: 116 and 12,  
2641     cost of consumption: 85  
2642 PIPELINE 878,  
2643     between: 176 and 192,  
2644     cost of consumption: 465  
2645 PIPELINE 879,  
2646     between: 155 and 3,  
2647     cost of consumption: 324  
2648 PIPELINE 880,  
2649     between: 233 and 227,  
2650     cost of consumption: 362  
2651 PIPELINE 881,  
2652     between: 117 and 174,  
2653     cost of consumption: 858  
2654 PIPELINE 882,  
2655     between: 51 and 182,  
2656     cost of consumption: 149  
2657 PIPELINE 883,  
2658     between: 146 and 83,  
2659     cost of consumption: 239  
2660 PIPELINE 884,  
2661     between: 8 and 11,  
2662     cost of consumption: 247  
2663 PIPELINE 885,  
2664     between: 88 and 45,  
2665     cost of consumption: 98  
2666 PIPELINE 886,  
2667     between: 210 and 197,  
2668     cost of consumption: 752  
2669 PIPELINE 887,  
2670     between: 222 and 57,  
2671     cost of consumption: 684  
2672 PIPELINE 888,  
2673     between: 94 and 234,  
2674     cost of consumption: 861  
2675 PIPELINE 889,  
2676     between: 74 and 133,  
2677     cost of consumption: 264  
2678 PIPELINE 890,  
2679     between: 25 and 110,  
2680     cost of consumption: 179  
2681 PIPELINE 891,  
2682     between: 87 and 228,  
2683     cost of consumption: 114  
2684 PIPELINE 892,  
2685     between: 100 and 23,  
2686     cost of consumption: 696  
2687 PIPELINE 893,  
2688     between: 125 and 169,  
2689     cost of consumption: 323  
2690 PIPELINE 894,  
2691     between: 71 and 178,  
2692     cost of consumption: 23  
2693 PIPELINE 895,  
2694     between: 25 and 10,  
2695     cost of consumption: 804  
2696 PIPELINE 896,  
2697     between: 6 and 221,  
2698     cost of consumption: 745  
2699 PIPELINE 897,  
2700     between: 33 and 187,  
2701     cost of consumption: 203  
2702 PIPELINE 898,  
2703     between: 73 and 26,  
2704     cost of consumption: 829  
2705 PIPELINE 899,  
2706     between: 49 and 100,  
2707     cost of consumption: 90  
2708 PIPELINE 900,  
2709     between: 28 and 126,  
2710     cost of consumption: 713  
2711 PIPELINE 901,  
2712     between: 234 and 213,  
2713     cost of consumption: 565  
2714 PIPELINE 902,  
2715     between: 103 and 57,  
2716     cost of consumption: 916  
2717 PIPELINE 903,  
2718     between: 155 and 182,  
2719     cost of consumption: 629  
2720 PIPELINE 904,  
2721     between: 33 and 254,  
2722     cost of consumption: 639  
2723 PIPELINE 905,  
2724     between: 179 and 23,  
2725     cost of consumption: 706  
2726 PIPELINE 906,  
2727     between: 114 and 30,  
2728     cost of consumption: 823  
2729 PIPELINE 907,  
2730     between: 247 and 63,  
2731     cost of consumption: 866  
2732 PIPELINE 908,  
2733     between: 181 and 136,  
2734     cost of consumption: 916  
2735 PIPELINE 909,

2736        between: 93 and 185,  
2737        cost of consumption: 785  
2738 PIPELINE 910,  
2739        between: 138 and 213,  
2740        cost of consumption: 143  
2741 PIPELINE 911,  
2742        between: 38 and 192,  
2743        cost of consumption: 996  
2744 PIPELINE 912,  
2745        between: 166 and 39,  
2746        cost of consumption: 253  
2747 PIPELINE 913,  
2748        between: 61 and 194,  
2749        cost of consumption: 356  
2750 PIPELINE 914,  
2751        between: 126 and 228,  
2752        cost of consumption: 538  
2753 PIPELINE 915,  
2754        between: 112 and 151,  
2755        cost of consumption: 745  
2756 PIPELINE 916,  
2757        between: 109 and 10,  
2758        cost of consumption: 71  
2759 PIPELINE 917,  
2760        between: 71 and 1,  
2761        cost of consumption: 263  
2762 PIPELINE 918,  
2763        between: 221 and 182,  
2764        cost of consumption: 703  
2765 PIPELINE 919,  
2766        between: 140 and 19,  
2767        cost of consumption: 545  
2768 PIPELINE 920,  
2769        between: 160 and 157,  
2770        cost of consumption: 102  
2771 PIPELINE 921,  
2772        between: 50 and 196,  
2773        cost of consumption: 550  
2774 PIPELINE 922,  
2775        between: 153 and 106,  
2776        cost of consumption: 998  
2777 PIPELINE 923,  
2778        between: 58 and 168,  
2779        cost of consumption: 840  
2780 PIPELINE 924,  
2781        between: 145 and 38,  
2782        cost of consumption: 692  
2783 PIPELINE 925,  
2784        between: 230 and 150,  
2785        cost of consumption: 628  
2786 PIPELINE 926,  
2787        between: 82 and 4,  
2788        cost of consumption: 742  
2789 PIPELINE 927,  
2790        between: 221 and 75,  
2791        cost of consumption: 479  
2792 PIPELINE 928,  
2793        between: 167 and 40,  
2794        cost of consumption: 37  
2795 PIPELINE 929,  
2796        between: 249 and 181,  
2797        cost of consumption: 592  
2798 PIPELINE 930,  
2799        between: 5 and 85,  
2800        cost of consumption: 877  
2801 PIPELINE 931,  
2802        between: 231 and 136,  
2803        cost of consumption: 305  
2804 PIPELINE 932,  
2805        between: 136 and 33,  
2806        cost of consumption: 436  
2807 PIPELINE 933,  
2808        between: 81 and 91,  
2809        cost of consumption: 180  
2810 PIPELINE 934,  
2811        between: 221 and 236,  
2812        cost of consumption: 514  
2813 PIPELINE 935,  
2814        between: 76 and 210,  
2815        cost of consumption: 72  
2816 PIPELINE 936,  
2817        between: 83 and 37,  
2818        cost of consumption: 260  
2819 PIPELINE 937,  
2820        between: 100 and 2,  
2821        cost of consumption: 544  
2822 PIPELINE 938,  
2823        between: 118 and 169,  
2824        cost of consumption: 488  
2825 PIPELINE 939,  
2826        between: 62 and 162,  
2827        cost of consumption: 357  
2828 PIPELINE 940,  
2829        between: 25 and 168,  
2830        cost of consumption: 579  
2831 PIPELINE 941,  
2832        between: 146 and 143,  
2833        cost of consumption: 643  
2834 PIPELINE 942,  
2835        between: 206 and 23,  
2836        cost of consumption: 892  
2837 PIPELINE 943,  
2838        between: 117 and 105,  
2839        cost of consumption: 576  
2840 PIPELINE 944,  
2841        between: 196 and 70,  
2842        cost of consumption: 44  
2843 PIPELINE 945,  
2844        between: 57 and 146,  
2845        cost of consumption: 535

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2846 PIPELINE 946,  
2847     between: 69 and 230,  
2848     cost of consumption: 436  
2849 PIPELINE 947,  
2850     between: 84 and 74,  
2851     cost of consumption: 518  
2852 PIPELINE 948,  
2853     between: 175 and 193,  
2854     cost of consumption: 391  
2855 PIPELINE 949,  
2856     between: 51 and 255,  
2857     cost of consumption: 401  
2858 PIPELINE 950,  
2859     between: 107 and 25,  
2860     cost of consumption: 793  
2861 PIPELINE 951,  
2862     between: 249 and 171,  
2863     cost of consumption: 312  
2864 PIPELINE 952,  
2865     between: 15 and 121,  
2866     cost of consumption: 856  
2867 PIPELINE 953,  
2868     between: 71 and 239,  
2869     cost of consumption: 769  
2870 PIPELINE 954,  
2871     between: 218 and 179,  
2872     cost of consumption: 887  
2873 PIPELINE 955,  
2874     between: 89 and 237,  
2875     cost of consumption: 897  
2876 PIPELINE 956,  
2877     between: 171 and 50,  
2878     cost of consumption: 775  
2879 PIPELINE 957,  
2880     between: 34 and 134,  
2881     cost of consumption: 610  
2882 PIPELINE 958,  
2883     between: 155 and 54,  
2884     cost of consumption: 171  
2885 PIPELINE 959,  
2886     between: 189 and 105,  
2887     cost of consumption: 546  
2888 PIPELINE 960,  
2889     between: 130 and 212,  
2890     cost of consumption: 971  
2891 PIPELINE 961,  
2892     between: 238 and 206,  
2893     cost of consumption: 318  
2894 PIPELINE 962,  
2895     between: 234 and 221,  
2896     cost of consumption: 944  
2897 PIPELINE 963,  
2898     between: 253 and 36,  
2899     cost of consumption: 927  
2900 PIPELINE 964,  
2901     between: 121 and 254,  
2902     cost of consumption: 146  
2903 PIPELINE 965,  
2904     between: 59 and 88,  
2905     cost of consumption: 759  
2906 PIPELINE 966,  
2907     between: 143 and 3,  
2908     cost of consumption: 537  
2909 PIPELINE 967,  
2910     between: 202 and 38,  
2911     cost of consumption: 384  
2912 PIPELINE 968,  
2913     between: 79 and 193,  
2914     cost of consumption: 838  
2915 PIPELINE 969,  
2916     between: 149 and 127,  
2917     cost of consumption: 439  
2918 PIPELINE 970,  
2919     between: 218 and 1,  
2920     cost of consumption: 187  
2921 PIPELINE 971,  
2922     between: 57 and 239,  
2923     cost of consumption: 657  
2924 PIPELINE 972,  
2925     between: 66 and 217,  
2926     cost of consumption: 191  
2927 PIPELINE 973,  
2928     between: 197 and 214,  
2929     cost of consumption: 27  
2930 PIPELINE 974,  
2931     between: 55 and 79,  
2932     cost of consumption: 738  
2933 PIPELINE 975,  
2934     between: 93 and 138,  
2935     cost of consumption: 362  
2936 PIPELINE 976,  
2937     between: 111 and 26,  
2938     cost of consumption: 781  
2939 PIPELINE 977,  
2940     between: 180 and 228,  
2941     cost of consumption: 779  
2942 PIPELINE 978,  
2943     between: 127 and 51,  
2944     cost of consumption: 517  
2945 PIPELINE 979,  
2946     between: 128 and 200,  
2947     cost of consumption: 732  
2948 PIPELINE 980,  
2949     between: 234 and 162,  
2950     cost of consumption: 173  
2951 PIPELINE 981,  
2952     between: 40 and 219,  
2953     cost of consumption: 276  
2954 PIPELINE 982,

```
2955     between: 53 and 30,  
2956     cost of consumption: 54  
2957 PIPELINE 983,  
2958     between: 31 and 227,  
2959     cost of consumption: 708  
2960 PIPELINE 984,  
2961     between: 45 and 27,  
2962     cost of consumption: 1004  
2963 PIPELINE 985,  
2964     between: 58 and 120,  
2965     cost of consumption: 822  
2966 PIPELINE 986,  
2967     between: 159 and 231,  
2968     cost of consumption: 760  
2969 PIPELINE 987,  
2970     between: 8 and 155,  
2971     cost of consumption: 236  
2972 PIPELINE 988,  
2973     between: 150 and 26,  
2974     cost of consumption: 559  
2975 PIPELINE 989,  
2976     between: 230 and 154,  
2977     cost of consumption: 247  
2978 PIPELINE 990,  
2979     between: 181 and 132,  
2980     cost of consumption: 138  
2981 PIPELINE 991,  
2982     between: 133 and 173,  
2983     cost of consumption: 901  
2984 PIPELINE 992,  
2985     between: 69 and 226,  
2986     cost of consumption: 203  
2987 PIPELINE 993,  
2988     between: 222 and 1,  
2989     cost of consumption: 983  
2990 PIPELINE 994,  
2991     between: 77 and 46,  
2992     cost of consumption: 514  
2993 PIPELINE 995,  
2994     between: 12 and 105,  
2995     cost of consumption: 938  
2996 PIPELINE 996,  
2997     between: 86 and 8,  
2998     cost of consumption: 713  
2999 PIPELINE 997,  
3000     between: 185 and 16.
```

testcase8.txt

```
1 ----- CASE 8 -----
2
3 CASE 8
4 -----
5
6 Given Pipelines:
7 {
8   PIPELINE 0,
9     between: 0 and 0,
10    cost of consumption: 701
11  PIPELINE 1,
12    between: 1 and 1,
13    cost of consumption: 631
14  PIPELINE 2,
15    between: 2 and 2,
16    cost of consumption: 661
17  PIPELINE 3,
18    between: 3 and 3,
19    cost of consumption: 235
20  PIPELINE 4,
21    between: 4 and 4,
22    cost of consumption: 460
23  PIPELINE 5,
24    between: 5 and 5,
25    cost of consumption: 449
26  PIPELINE 6,
27    between: 6 and 6,
28    cost of consumption: 225
29  PIPELINE 7,
30    between: 7 and 7,
31    cost of consumption: 224
32  PIPELINE 8,
33    between: 8 and 8,
34    cost of consumption: 973
35  PIPELINE 9,
36    between: 9 and 9,
37    cost of consumption: 874
38  PIPELINE 10,
39    between: 10 and 10,
40    cost of consumption: 126
41  PIPELINE 11,
42    between: 11 and 11,
43    cost of consumption: 39
44  PIPELINE 12,
45    between: 12 and 12,
46    cost of consumption: 900
47  PIPELINE 13,
48    between: 13 and 13,
49    cost of consumption: 550
50  PIPELINE 14,
51    between: 14 and 14,
52    cost of consumption: 686
53  PIPELINE 15,
54    between: 15 and 15,
55    cost of consumption: 879
56  PIPELINE 16,
57    between: 16 and 16,
58    cost of consumption: 586
59  PIPELINE 17,
60    between: 17 and 17,
61    cost of consumption: 519
62  PIPELINE 18,
63    between: 18 and 18,
64    cost of consumption: 635
65  PIPELINE 19,
66    between: 19 and 19,
67    cost of consumption: 475
68  PIPELINE 20,
69    between: 20 and 20,
70    cost of consumption: 577
71  PIPELINE 21,
72    between: 21 and 21,
73    cost of consumption: 73
74  PIPELINE 22,
75    between: 22 and 22,
76    cost of consumption: 586
77  PIPELINE 23,
78    between: 23 and 23,
79    cost of consumption: 1000
80  PIPELINE 24,
81    between: 24 and 24,
82    cost of consumption: 434
83  PIPELINE 25,
84    between: 25 and 25,
85    cost of consumption: 299
86  PIPELINE 26,
87    between: 26 and 26,
88    cost of consumption: 48
89  PIPELINE 27,
90    between: 27 and 27,
91    cost of consumption: 962
92  PIPELINE 28,
93    between: 28 and 28,
94    cost of consumption: 383
95  PIPELINE 29,
96    between: 29 and 29,
97    cost of consumption: 212
98  PIPELINE 30,
99    between: 30 and 30,
100   cost of consumption: 738
101  PIPELINE 31,
102    between: 31 and 31,
103    cost of consumption: 431
104  PIPELINE 32,
105    between: 32 and 32,
106    cost of consumption: 190
107  PIPELINE 33,
108    between: 33 and 33,
109    cost of consumption: 746
110  PIPELINE 34
```

110 PIPELINE 34,  
111     between: 34 and 34,  
112     cost of consumption: 661  
113 PIPELINE 35,  
114     between: 35 and 35,  
115     cost of consumption: 997  
116 PIPELINE 36,  
117     between: 36 and 36,  
118     cost of consumption: 191  
119 PIPELINE 37,  
120     between: 37 and 37,  
121     cost of consumption: 233  
122 PIPELINE 38,  
123     between: 38 and 38,  
124     cost of consumption: 216  
125 PIPELINE 39,  
126     between: 39 and 39,  
127     cost of consumption: 511  
128 PIPELINE 40,  
129     between: 40 and 40,  
130     cost of consumption: 455  
131 PIPELINE 41,  
132     between: 41 and 41,  
133     cost of consumption: 338  
134 PIPELINE 42,  
135     between: 42 and 42,  
136     cost of consumption: 545  
137 PIPELINE 43,  
138     between: 43 and 43,  
139     cost of consumption: 350  
140 PIPELINE 44,  
141     between: 44 and 44,  
142     cost of consumption: 235  
143 PIPELINE 45,  
144     between: 45 and 45,  
145     cost of consumption: 578  
146 PIPELINE 46,  
147     between: 46 and 46,  
148     cost of consumption: 224  
149 PIPELINE 47,  
150     between: 47 and 47,  
151     cost of consumption: 816  
152 PIPELINE 48,  
153     between: 48 and 48,  
154     cost of consumption: 445  
155 PIPELINE 49,  
156     between: 49 and 49,  
157     cost of consumption: 206  
158 PIPELINE 50,  
159     between: 50 and 50,  
160     cost of consumption: 287  
161 PIPELINE 51,  
162     between: 51 and 51,  
163     cost of consumption: 17  
164 PIPELINE 52,  
165     between: 52 and 52,  
166     cost of consumption: 626  
167 PIPELINE 53,  
168     between: 53 and 53,  
169     cost of consumption: 220  
170 PIPELINE 54,  
171     between: 54 and 54,  
172     cost of consumption: 12  
173 PIPELINE 55,  
174     between: 55 and 55,  
175     cost of consumption: 56  
176 PIPELINE 56,  
177     between: 56 and 56,  
178     cost of consumption: 514  
179 PIPELINE 57,  
180     between: 57 and 57,  
181     cost of consumption: 408  
182 PIPELINE 58,  
183     between: 58 and 58,  
184     cost of consumption: 365  
185 PIPELINE 59,  
186     between: 59 and 59,  
187     cost of consumption: 244  
188 PIPELINE 60,  
189     between: 60 and 60,  
190     cost of consumption: 967  
191 PIPELINE 61,  
192     between: 61 and 61,  
193     cost of consumption: 98  
194 PIPELINE 62,  
195     between: 62 and 62,  
196     cost of consumption: 671  
197 PIPELINE 63,  
198     between: 63 and 63,  
199     cost of consumption: 152  
200 PIPELINE 64,  
201     between: 64 and 64,  
202     cost of consumption: 840  
203 PIPELINE 65,  
204     between: 65 and 65,  
205     cost of consumption: 679  
206 PIPELINE 66,  
207     between: 66 and 66,  
208     cost of consumption: 144  
209 PIPELINE 67,  
210     between: 67 and 67,  
211     cost of consumption: 378  
212 PIPELINE 68,  
213     between: 68 and 68,  
214     cost of consumption: 260  
215 PIPELINE 69,  
216     between: 69 and 69,  
217     cost of consumption: 708  
218 PIPELINE 70,  
219     between: 70 and 70.

```
--      .. . . . .  
220      cost of consumption: 236  
221 PIPELINE 71,  
222      between: 71 and 71,  
223      cost of consumption: 710  
224 PIPELINE 72,  
225      between: 72 and 72,  
226      cost of consumption: 41  
227 PIPELINE 73,  
228      between: 73 and 73,  
229      cost of consumption: 776  
230 PIPELINE 74,  
231      between: 74 and 74,  
232      cost of consumption: 55  
233 PIPELINE 75,  
234      between: 75 and 75,  
235      cost of consumption: 271  
236 PIPELINE 76,  
237      between: 76 and 76,  
238      cost of consumption: 702  
239 PIPELINE 77,  
240      between: 77 and 77,  
241      cost of consumption: 274  
242 PIPELINE 78,  
243      between: 78 and 78,  
244      cost of consumption: 435  
245 PIPELINE 79,  
246      between: 79 and 79,  
247      cost of consumption: 142  
248 PIPELINE 80,  
249      between: 80 and 80,  
250      cost of consumption: 827  
251 PIPELINE 81,  
252      between: 81 and 81,  
253      cost of consumption: 717  
254 PIPELINE 82,  
255      between: 82 and 82,  
256      cost of consumption: 506  
257 PIPELINE 83,  
258      between: 83 and 83,  
259      cost of consumption: 448  
260 PIPELINE 84,  
261      between: 84 and 84,  
262      cost of consumption: 932  
263 PIPELINE 85,  
264      between: 85 and 85,  
265      cost of consumption: 514  
266 PIPELINE 86,  
267      between: 86 and 86,  
268      cost of consumption: 851  
269 PIPELINE 87,  
270      between: 87 and 87,  
271      cost of consumption: 793  
272 PIPELINE 88,  
273      between: 88 and 88,  
274      cost of consumption: 269  
275 PIPELINE 89,  
276      between: 89 and 89,  
277      cost of consumption: 211  
278 PIPELINE 90,  
279      between: 90 and 90,  
280      cost of consumption: 32  
281 PIPELINE 91,  
282      between: 91 and 91,  
283      cost of consumption: 231  
284 PIPELINE 92,  
285      between: 92 and 92,  
286      cost of consumption: 657  
287 PIPELINE 93,  
288      between: 93 and 93,  
289      cost of consumption: 50  
290 PIPELINE 94,  
291      between: 94 and 94,  
292      cost of consumption: 378  
293 PIPELINE 95,  
294      between: 95 and 95,  
295      cost of consumption: 844  
296 PIPELINE 96,  
297      between: 96 and 96,  
298      cost of consumption: 77  
299 PIPELINE 97,  
300      between: 97 and 97,  
301      cost of consumption: 869  
302 PIPELINE 98,  
303      between: 98 and 98,  
304      cost of consumption: 217  
305 PIPELINE 99,  
306      between: 99 and 99,  
307      cost of consumption: 332  
308 PIPELINE 100,  
309      between: 100 and 100,  
310      cost of consumption: 572  
311 PIPELINE 101,  
312      between: 101 and 101,  
313      cost of consumption: 800  
314 PIPELINE 102,  
315      between: 102 and 102,  
316      cost of consumption: 389  
317 PIPELINE 103,  
318      between: 103 and 103,  
319      cost of consumption: 608  
320 PIPELINE 104,  
321      between: 104 and 104,  
322      cost of consumption: 571  
323 PIPELINE 105,  
324      between: 105 and 105,  
325      cost of consumption: 439  
326 PIPELINE 106,  
327      between: 106 and 106,  
328      cost of consumption: 227
```

329 PIPELINE 107,  
330     between: 107 and 107,  
331     cost of consumption: 620  
332 PIPELINE 108,  
333     between: 108 and 108,  
334     cost of consumption: 60  
335 PIPELINE 109,  
336     between: 109 and 109,  
337     cost of consumption: 657  
338 PIPELINE 110,  
339     between: 110 and 110,  
340     cost of consumption: 757  
341 PIPELINE 111,  
342     between: 111 and 111,  
343     cost of consumption: 234  
344 PIPELINE 112,  
345     between: 112 and 112,  
346     cost of consumption: 721  
347 PIPELINE 113,  
348     between: 113 and 113,  
349     cost of consumption: 259  
350 PIPELINE 114,  
351     between: 114 and 114,  
352     cost of consumption: 677  
353 PIPELINE 115,  
354     between: 115 and 115,  
355     cost of consumption: 1000  
356 PIPELINE 116,  
357     between: 116 and 116,  
358     cost of consumption: 120  
359 PIPELINE 117,  
360     between: 117 and 117,  
361     cost of consumption: 876  
362 PIPELINE 118,  
363     between: 118 and 118,  
364     cost of consumption: 788  
365 PIPELINE 119,  
366     between: 119 and 119,  
367     cost of consumption: 384  
368 PIPELINE 120,  
369     between: 120 and 120,  
370     cost of consumption: 82  
371 PIPELINE 121,  
372     between: 121 and 121,  
373     cost of consumption: 167  
374 PIPELINE 122,  
375     between: 122 and 122,  
376     cost of consumption: 610  
377 PIPELINE 123,  
378     between: 123 and 123,  
379     cost of consumption: 734  
380 PIPELINE 124,  
381     between: 124 and 124,  
382     cost of consumption: 565  
383 PIPELINE 125,  
384     between: 125 and 125,  
385     cost of consumption: 335  
386 PIPELINE 126,  
387     between: 126 and 126,  
388     cost of consumption: 573  
389 PIPELINE 127,  
390     between: 127 and 127,  
391     cost of consumption: 989  
392 PIPELINE 128,  
393     between: 128 and 128,  
394     cost of consumption: 199  
395 PIPELINE 129,  
396     between: 129 and 129,  
397     cost of consumption: 137  
398 PIPELINE 130,  
399     between: 130 and 130,  
400     cost of consumption: 316  
401 PIPELINE 131,  
402     between: 131 and 131,  
403     cost of consumption: 767  
404 PIPELINE 132,  
405     between: 132 and 132,  
406     cost of consumption: 932  
407 PIPELINE 133,  
408     between: 133 and 133,  
409     cost of consumption: 52  
410 PIPELINE 134,  
411     between: 134 and 134,  
412     cost of consumption: 722  
413 PIPELINE 135,  
414     between: 135 and 135,  
415     cost of consumption: 851  
416 PIPELINE 136,  
417     between: 136 and 136,  
418     cost of consumption: 486  
419 PIPELINE 137,  
420     between: 137 and 137,  
421     cost of consumption: 296  
422 PIPELINE 138,  
423     between: 138 and 138,  
424     cost of consumption: 466  
425 PIPELINE 139,  
426     between: 139 and 139,  
427     cost of consumption: 893  
428 PIPELINE 140,  
429     between: 140 and 140,  
430     cost of consumption: 300  
431 PIPELINE 141,  
432     between: 141 and 141,  
433     cost of consumption: 571  
434 PIPELINE 142,  
435     between: 142 and 142,  
436     cost of consumption: 122  
437 PIPELINE 143,  
438     between: 143 and 143

430        between: 143 and 143,  
431        cost of consumption: 368  
440 PIPELINE 144,  
441        between: 144 and 144,  
442        cost of consumption: 825  
443 PIPELINE 145,  
444        between: 145 and 145,  
445        cost of consumption: 146  
446 PIPELINE 146,  
447        between: 146 and 146,  
448        cost of consumption: 363  
449 PIPELINE 147,  
450        between: 147 and 147,  
451        cost of consumption: 292  
452 PIPELINE 148,  
453        between: 148 and 148,  
454        cost of consumption: 17  
455 PIPELINE 149,  
456        between: 149 and 149,  
457        cost of consumption: 498  
458 PIPELINE 150,  
459        between: 150 and 150,  
460        cost of consumption: 671  
461 PIPELINE 151,  
462        between: 151 and 151,  
463        cost of consumption: 447  
464 PIPELINE 152,  
465        between: 152 and 152,  
466        cost of consumption: 13  
467 PIPELINE 153,  
468        between: 153 and 153,  
469        cost of consumption: 628  
470 PIPELINE 154,  
471        between: 154 and 154,  
472        cost of consumption: 528  
473 PIPELINE 155,  
474        between: 155 and 155,  
475        cost of consumption: 925  
476 PIPELINE 156,  
477        between: 156 and 156,  
478        cost of consumption: 310  
479 PIPELINE 157,  
480        between: 157 and 157,  
481        cost of consumption: 449  
482 PIPELINE 158,  
483        between: 158 and 158,  
484        cost of consumption: 909  
485 PIPELINE 159,  
486        between: 159 and 159,  
487        cost of consumption: 504  
488 PIPELINE 160,  
489        between: 160 and 160,  
490        cost of consumption: 581  
491 PIPELINE 161,  
492        between: 161 and 161,  
493        cost of consumption: 220  
494 PIPELINE 162,  
495        between: 162 and 162,  
496        cost of consumption: 618  
497 PIPELINE 163,  
498        between: 163 and 163,  
499        cost of consumption: 861  
500 PIPELINE 164,  
501        between: 164 and 164,  
502        cost of consumption: 619  
503 PIPELINE 165,  
504        between: 165 and 165,  
505        cost of consumption: 688  
506 PIPELINE 166,  
507        between: 166 and 166,  
508        cost of consumption: 59  
509 PIPELINE 167,  
510        between: 167 and 167,  
511        cost of consumption: 452  
512 PIPELINE 168,  
513        between: 168 and 168,  
514        cost of consumption: 331  
515 PIPELINE 169,  
516        between: 169 and 169,  
517        cost of consumption: 872  
518 PIPELINE 170,  
519        between: 170 and 170,  
520        cost of consumption: 340  
521 PIPELINE 171,  
522        between: 171 and 171,  
523        cost of consumption: 979  
524 PIPELINE 172,  
525        between: 172 and 172,  
526        cost of consumption: 438  
527 PIPELINE 173,  
528        between: 173 and 173,  
529        cost of consumption: 809  
530 PIPELINE 174,  
531        between: 174 and 174,  
532        cost of consumption: 342  
533 PIPELINE 175,  
534        between: 175 and 175,  
535        cost of consumption: 610  
536 PIPELINE 176,  
537        between: 176 and 176,  
538        cost of consumption: 302  
539 PIPELINE 177,  
540        between: 177 and 177,  
541        cost of consumption: 53  
542 PIPELINE 178,  
543        between: 178 and 178,  
544        cost of consumption: 897  
545 PIPELINE 179,  
546        between: 179 and 179,  
547        cost of consumption: 667

548 PIPELINE 180,  
549     between: 180 and 180,  
550     cost of consumption: 898  
551 PIPELINE 181,  
552     between: 181 and 181,  
553     cost of consumption: 915  
554 PIPELINE 182,  
555     between: 182 and 182,  
556     cost of consumption: 109  
557 PIPELINE 183,  
558     between: 183 and 183,  
559     cost of consumption: 906  
560 PIPELINE 184,  
561     between: 184 and 184,  
562     cost of consumption: 890  
563 PIPELINE 185,  
564     between: 185 and 185,  
565     cost of consumption: 984  
566 PIPELINE 186,  
567     between: 186 and 186,  
568     cost of consumption: 826  
569 PIPELINE 187,  
570     between: 187 and 187,  
571     cost of consumption: 195  
572 PIPELINE 188,  
573     between: 188 and 188,  
574     cost of consumption: 428  
575 PIPELINE 189,  
576     between: 189 and 189,  
577     cost of consumption: 730  
578 PIPELINE 190,  
579     between: 190 and 190,  
580     cost of consumption: 47  
581 PIPELINE 191,  
582     between: 191 and 191,  
583     cost of consumption: 357  
584 PIPELINE 192,  
585     between: 192 and 192,  
586     cost of consumption: 297  
587 PIPELINE 193,  
588     between: 193 and 193,  
589     cost of consumption: 12  
590 PIPELINE 194,  
591     between: 194 and 194,  
592     cost of consumption: 565  
593 PIPELINE 195,  
594     between: 195 and 195,  
595     cost of consumption: 911  
596 PIPELINE 196,  
597     between: 196 and 196,  
598     cost of consumption: 47  
599 PIPELINE 197,  
600     between: 197 and 197,  
601     cost of consumption: 619  
602 PIPELINE 198,  
603     between: 198 and 198,  
604     cost of consumption: 358  
605 PIPELINE 199,  
606     between: 199 and 199,  
607     cost of consumption: 374  
608 PIPELINE 200,  
609     between: 200 and 200,  
610     cost of consumption: 486  
611 PIPELINE 201,  
612     between: 201 and 201,  
613     cost of consumption: 45  
614 PIPELINE 202,  
615     between: 202 and 202,  
616     cost of consumption: 700  
617 PIPELINE 203,  
618     between: 203 and 203,  
619     cost of consumption: 272  
620 PIPELINE 204,  
621     between: 204 and 204,  
622     cost of consumption: 201  
623 PIPELINE 205,  
624     between: 205 and 205,  
625     cost of consumption: 37  
626 PIPELINE 206,  
627     between: 206 and 206,  
628     cost of consumption: 877  
629 PIPELINE 207,  
630     between: 207 and 207,  
631     cost of consumption: 499  
632 PIPELINE 208,  
633     between: 208 and 208,  
634     cost of consumption: 437  
635 PIPELINE 209,  
636     between: 209 and 209,  
637     cost of consumption: 122  
638 PIPELINE 210,  
639     between: 210 and 210,  
640     cost of consumption: 161  
641 PIPELINE 211,  
642     between: 211 and 211,  
643     cost of consumption: 331  
644 PIPELINE 212,  
645     between: 212 and 212,  
646     cost of consumption: 32  
647 PIPELINE 213,  
648     between: 213 and 213,  
649     cost of consumption: 617  
650 PIPELINE 214,  
651     between: 214 and 214,  
652     cost of consumption: 584  
653 PIPELINE 215,  
654     between: 215 and 215,  
655     cost of consumption: 918  
656 PIPELINE 216,

551        between: 216 and 216,  
552        cost of consumption: 596  
553 PIPELINE 217,  
554        between: 217 and 217,  
555        cost of consumption: 406  
556 PIPELINE 218,  
557        between: 218 and 218,  
558        cost of consumption: 460  
559 PIPELINE 219,  
560        between: 219 and 219,  
561        cost of consumption: 20  
562 PIPELINE 220,  
563        between: 220 and 220,  
564        cost of consumption: 483  
565 PIPELINE 221,  
566        between: 221 and 221,  
567        cost of consumption: 502  
568 PIPELINE 222,  
569        between: 222 and 222,  
570        cost of consumption: 724  
571 PIPELINE 223,  
572        between: 223 and 223,  
573        cost of consumption: 128  
574 PIPELINE 224,  
575        between: 224 and 224,  
576        cost of consumption: 862  
577 PIPELINE 225,  
578        between: 225 and 225,  
579        cost of consumption: 284  
580 PIPELINE 226,  
581        between: 226 and 226,  
582        cost of consumption: 386  
583 PIPELINE 227,  
584        between: 227 and 227,  
585        cost of consumption: 904  
586 PIPELINE 228,  
587        between: 228 and 228,  
588        cost of consumption: 898  
589 PIPELINE 229,  
590        between: 229 and 229,  
591        cost of consumption: 92  
592 PIPELINE 230,  
593        between: 230 and 230,  
594        cost of consumption: 625  
595 PIPELINE 231,  
596        between: 231 and 231,  
597        cost of consumption: 731  
598 PIPELINE 232,  
599        between: 232 and 232,  
600        cost of consumption: 132  
601 PIPELINE 233,  
602        between: 233 and 233,  
603        cost of consumption: 320  
604 PIPELINE 234,  
605        between: 234 and 234,  
606        cost of consumption: 998  
607 PIPELINE 235,  
608        between: 235 and 235,  
609        cost of consumption: 681  
610 PIPELINE 236,  
611        between: 236 and 236,  
612        cost of consumption: 705  
613 PIPELINE 237,  
614        between: 237 and 237,  
615        cost of consumption: 223  
616 PIPELINE 238,  
617        between: 238 and 238,  
618        cost of consumption: 175  
619 PIPELINE 239,  
620        between: 239 and 239,  
621        cost of consumption: 137  
622 PIPELINE 240,  
623        between: 240 and 240,  
624        cost of consumption: 340  
625 PIPELINE 241,  
626        between: 241 and 241,  
627        cost of consumption: 683  
628 PIPELINE 242,  
629        between: 242 and 242,  
630        cost of consumption: 463  
631 PIPELINE 243,  
632        between: 243 and 243,  
633        cost of consumption: 719  
634 PIPELINE 244,  
635        between: 244 and 244,  
636        cost of consumption: 295  
637 PIPELINE 245,  
638        between: 245 and 245,  
639        cost of consumption: 43  
640 PIPELINE 246,  
641        between: 246 and 246,  
642        cost of consumption: 984  
643 PIPELINE 247,  
644        between: 247 and 247,  
645        cost of consumption: 238  
646 PIPELINE 248,  
647        between: 248 and 248,  
648        cost of consumption: 796  
649 PIPELINE 249,  
650        between: 249 and 249,  
651        cost of consumption: 440  
652 PIPELINE 250,  
653        between: 250 and 250,  
654        cost of consumption: 605  
655 PIPELINE 251,  
656        between: 251 and 251,  
657        cost of consumption: 626  
658 PIPELINE 252,  
659        between: 252 and 252,  
660        cost of consumption: 289

767 PIPELINE 253,  
768     between: 253 and 253,  
769     cost of consumption: 324  
770 PIPELINE 254,  
771     between: 254 and 254,  
772     cost of consumption: 749  
773 PIPELINE 255,  
774     between: 255 and 255,  
775     cost of consumption: 146  
776 PIPELINE 256,  
777     between: 158 and 14,  
778     cost of consumption: 46  
779 PIPELINE 257,  
780     between: 51 and 213,  
781     cost of consumption: 18  
782 PIPELINE 258,  
783     between: 2 and 20,  
784     cost of consumption: 334  
785 PIPELINE 259,  
786     between: 131 and 112,  
787     cost of consumption: 386  
788 PIPELINE 260,  
789     between: 141 and 186,  
790     cost of consumption: 518  
791 PIPELINE 261,  
792     between: 44 and 112,  
793     cost of consumption: 329  
794 PIPELINE 262,  
795     between: 231 and 98,  
796     cost of consumption: 719  
797 PIPELINE 263,  
798     between: 130 and 76,  
799     cost of consumption: 862  
800 PIPELINE 264,  
801     between: 13 and 212,  
802     cost of consumption: 483  
803 PIPELINE 265,  
804     between: 122 and 108,  
805     cost of consumption: 580  
806 PIPELINE 266,  
807     between: 79 and 10,  
808     cost of consumption: 58  
809 PIPELINE 267,  
810     between: 104 and 62,  
811     cost of consumption: 623  
812 PIPELINE 268,  
813     between: 78 and 64,  
814     cost of consumption: 667  
815 PIPELINE 269,  
816     between: 79 and 195,  
817     cost of consumption: 388  
818 PIPELINE 270,  
819     between: 108 and 81,  
820     cost of consumption: 278  
821 PIPELINE 271,  
822     between: 253 and 125,  
823     cost of consumption: 199  
824 PIPELINE 272,  
825     between: 33 and 100,  
826     cost of consumption: 761  
827 PIPELINE 273,  
828     between: 83 and 231,  
829     cost of consumption: 205  
830 PIPELINE 274,  
831     between: 204 and 244,  
832     cost of consumption: 954  
833 PIPELINE 275,  
834     between: 195 and 110,  
835     cost of consumption: 22  
836 PIPELINE 276,  
837     between: 250 and 190,  
838     cost of consumption: 688  
839 PIPELINE 277,  
840     between: 63 and 38,  
841     cost of consumption: 902  
842 PIPELINE 278,  
843     between: 89 and 116,  
844     cost of consumption: 390  
845 PIPELINE 279,  
846     between: 135 and 195,  
847     cost of consumption: 146  
848 PIPELINE 280,  
849     between: 38 and 47,  
850     cost of consumption: 739  
851 PIPELINE 281,  
852     between: 128 and 45,  
853     cost of consumption: 504  
854 PIPELINE 282,  
855     between: 74 and 78,  
856     cost of consumption: 157  
857 PIPELINE 283,  
858     between: 118 and 162,  
859     cost of consumption: 28  
860 PIPELINE 284,  
861     between: 239 and 110,  
862     cost of consumption: 552  
863 PIPELINE 285,  
864     between: 60 and 49,  
865     cost of consumption: 367  
866 PIPELINE 286,  
867     between: 245 and 43,  
868     cost of consumption: 909  
869 PIPELINE 287,  
870     between: 184 and 106,  
871     cost of consumption: 275  
872 PIPELINE 288,  
873     between: 186 and 195,  
874     cost of consumption: 128  
875 PIPELINE 289,  
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876        between: 251 and 75,  
877        cost of consumption: 147  
878 PIPELINE 290,  
879        between: 0 and 113,  
880        cost of consumption: 67  
881 PIPELINE 291,  
882        between: 86 and 241,  
883        cost of consumption: 48  
884 PIPELINE 292,  
885        between: 42 and 59,  
886        cost of consumption: 470  
887 PIPELINE 293,  
888        between: 98 and 178,  
889        cost of consumption: 696  
890 PIPELINE 294,  
891        between: 129 and 161,  
892        cost of consumption: 287  
893 PIPELINE 295,  
894        between: 148 and 221,  
895        cost of consumption: 368  
896 PIPELINE 296,  
897        between: 22 and 210,  
898        cost of consumption: 516  
899 PIPELINE 297,  
900        between: 86 and 138,  
901        cost of consumption: 486  
902 PIPELINE 298,  
903        between: 189 and 68,  
904        cost of consumption: 546  
905 PIPELINE 299,  
906        between: 152 and 64,  
907        cost of consumption: 357  
908 PIPELINE 300,  
909        between: 54 and 64,  
910        cost of consumption: 654  
911 PIPELINE 301,  
912        between: 4 and 151,  
913        cost of consumption: 360  
914 PIPELINE 302,  
915        between: 255 and 193,  
916        cost of consumption: 371  
917 PIPELINE 303,  
918        between: 73 and 35,  
919        cost of consumption: 93  
920 PIPELINE 304,  
921        between: 52 and 164,  
922        cost of consumption: 78  
923 PIPELINE 305,  
924        between: 142 and 56,  
925        cost of consumption: 627  
926 PIPELINE 306,  
927        between: 26 and 79,  
928        cost of consumption: 405  
929 PIPELINE 307,  
930        between: 209 and 165,  
931        cost of consumption: 800  
932 PIPELINE 308,  
933        between: 242 and 98,  
934        cost of consumption: 60  
935 PIPELINE 309,  
936        between: 215 and 250,  
937        cost of consumption: 868  
938 PIPELINE 310,  
939        between: 7 and 49,  
940        cost of consumption: 421  
941 PIPELINE 311,  
942        between: 169 and 53,  
943        cost of consumption: 100  
944 PIPELINE 312,  
945        between: 60 and 53,  
946        cost of consumption: 405  
947 PIPELINE 313,  
948        between: 10 and 126,  
949        cost of consumption: 192  
950 PIPELINE 314,  
951        between: 139 and 178,  
952        cost of consumption: 484  
953 PIPELINE 315,  
954        between: 172 and 65,  
955        cost of consumption: 828  
956 PIPELINE 316,  
957        between: 171 and 91,  
958        cost of consumption: 291  
959 PIPELINE 317,  
960        between: 123 and 44,  
961        cost of consumption: 777  
962 PIPELINE 318,  
963        between: 214 and 30,  
964        cost of consumption: 555  
965 PIPELINE 319,  
966        between: 118 and 246,  
967        cost of consumption: 750  
968 PIPELINE 320,  
969        between: 85 and 253,  
970        cost of consumption: 207  
971 PIPELINE 321,  
972        between: 117 and 166,  
973        cost of consumption: 636  
974 PIPELINE 322,  
975        between: 44 and 226,  
976        cost of consumption: 433  
977 PIPELINE 323,  
978        between: 164 and 237,  
979        cost of consumption: 767  
980 PIPELINE 324,  
981        between: 63 and 120,  
982        cost of consumption: 626  
983 PIPELINE 325,  
984        between: 126 and 36,  
985        cost of consumption: 347

985       cost of consumption: 37  
986 PIPELINE 326,  
987       between: 246 and 207,  
988       cost of consumption: 942  
989 PIPELINE 327,  
990       between: 188 and 75,  
991       cost of consumption: 274  
992 PIPELINE 328,  
993       between: 40 and 33,  
994       cost of consumption: 824  
995 PIPELINE 329,  
996       between: 247 and 151,  
997       cost of consumption: 838  
998 PIPELINE 330,  
999       between: 192 and 237,  
1000      cost of consumption: 20  
1001 PIPELINE 331,  
1002      between: 186 and 98,  
1003      cost of consumption: 666  
1004 PIPELINE 332,  
1005      between: 233 and 143,  
1006      cost of consumption: 485  
1007 PIPELINE 333,  
1008      between: 78 and 51,  
1009      cost of consumption: 194  
1010 PIPELINE 334,  
1011      between: 48 and 115,  
1012      cost of consumption: 234  
1013 PIPELINE 335,  
1014      between: 197 and 241,  
1015      cost of consumption: 326  
1016 PIPELINE 336,  
1017      between: 155 and 231,  
1018      cost of consumption: 798  
1019 PIPELINE 337,  
1020      between: 204 and 164,  
1021      cost of consumption: 49  
1022 PIPELINE 338,  
1023      between: 41 and 204,  
1024      cost of consumption: 578  
1025 PIPELINE 339,  
1026      between: 165 and 195,  
1027      cost of consumption: 90  
1028 PIPELINE 340,  
1029      between: 22 and 131,  
1030      cost of consumption: 151  
1031 PIPELINE 341,  
1032      between: 133 and 61,  
1033      cost of consumption: 177  
1034 PIPELINE 342,  
1035      between: 155 and 39,  
1036      cost of consumption: 616  
1037 PIPELINE 343,  
1038      between: 147 and 117,  
1039      cost of consumption: 220  
1040 PIPELINE 344,  
1041      between: 120 and 165,  
1042      cost of consumption: 527  
1043 PIPELINE 345,  
1044      between: 213 and 107,  
1045      cost of consumption: 664  
1046 PIPELINE 346,  
1047      between: 86 and 6,  
1048      cost of consumption: 808  
1049 PIPELINE 347,  
1050      between: 167 and 211,  
1051      cost of consumption: 596  
1052 PIPELINE 348,  
1053      between: 67 and 252,  
1054      cost of consumption: 448  
1055 PIPELINE 349,  
1056      between: 1 and 161,  
1057      cost of consumption: 620  
1058 PIPELINE 350,  
1059      between: 86 and 184,  
1060      cost of consumption: 503  
1061 PIPELINE 351,  
1062      between: 152 and 61,  
1063      cost of consumption: 653  
1064 PIPELINE 352,  
1065      between: 60 and 216,  
1066      cost of consumption: 52  
1067 PIPELINE 353,  
1068      between: 112 and 107,  
1069      cost of consumption: 481  
1070 PIPELINE 354,  
1071      between: 215 and 227,  
1072      cost of consumption: 702  
1073 PIPELINE 355,  
1074      between: 177 and 184,  
1075      cost of consumption: 337  
1076 PIPELINE 356,  
1077      between: 124 and 15,  
1078      cost of consumption: 432  
1079 PIPELINE 357,  
1080      between: 47 and 182,  
1081      cost of consumption: 923  
1082 PIPELINE 358,  
1083      between: 134 and 250,  
1084      cost of consumption: 727  
1085 PIPELINE 359,  
1086      between: 170 and 251,  
1087      cost of consumption: 721  
1088 PIPELINE 360,  
1089      between: 145 and 81,  
1090      cost of consumption: 737  
1091 PIPELINE 361,  
1092      between: 251 and 233,  
1093      cost of consumption: 790  
1094 PIPELINE 362,

1095        between: 163 and 37,  
1096        cost of consumption: 543  
1097 PIPELINE 363,  
1098        between: 114 and 149,  
1099        cost of consumption: 474  
1100 PIPELINE 364,  
1101        between: 182 and 108,  
1102        cost of consumption: 478  
1103 PIPELINE 365,  
1104        between: 160 and 29,  
1105        cost of consumption: 430  
1106 PIPELINE 366,  
1107        between: 244 and 154,  
1108        cost of consumption: 357  
1109 PIPELINE 367,  
1110        between: 79 and 201,  
1111        cost of consumption: 348  
1112 PIPELINE 368,  
1113        between: 125 and 80,  
1114        cost of consumption: 502  
1115 PIPELINE 369,  
1116        between: 168 and 250,  
1117        cost of consumption: 393  
1118 PIPELINE 370,  
1119        between: 116 and 139,  
1120        cost of consumption: 106  
1121 PIPELINE 371,  
1122        between: 248 and 134,  
1123        cost of consumption: 491  
1124 PIPELINE 372,  
1125        between: 185 and 42,  
1126        cost of consumption: 368  
1127 PIPELINE 373,  
1128        between: 83 and 156,  
1129        cost of consumption: 54  
1130 PIPELINE 374,  
1131        between: 89 and 83,  
1132        cost of consumption: 762  
1133 PIPELINE 375,  
1134        between: 66 and 243,  
1135        cost of consumption: 368  
1136 PIPELINE 376,  
1137        between: 227 and 231,  
1138        cost of consumption: 882  
1139 PIPELINE 377,  
1140        between: 148 and 55,  
1141        cost of consumption: 755  
1142 PIPELINE 378,  
1143        between: 251 and 180,  
1144        cost of consumption: 283  
1145 PIPELINE 379,  
1146        between: 92 and 92,  
1147        cost of consumption: 909  
1148 PIPELINE 380,  
1149        between: 184 and 208,  
1150        cost of consumption: 248  
1151 PIPELINE 381,  
1152        between: 101 and 200,  
1153        cost of consumption: 503  
1154 PIPELINE 382,  
1155        between: 251 and 130,  
1156        cost of consumption: 969  
1157 PIPELINE 383,  
1158        between: 182 and 213,  
1159        cost of consumption: 749  
1160 PIPELINE 384,  
1161        between: 7 and 46,  
1162        cost of consumption: 616  
1163 PIPELINE 385,  
1164        between: 197 and 112,  
1165        cost of consumption: 323  
1166 PIPELINE 386,  
1167        between: 160 and 84,  
1168        cost of consumption: 851  
1169 PIPELINE 387,  
1170        between: 21 and 232,  
1171        cost of consumption: 626  
1172 PIPELINE 388,  
1173        between: 83 and 227,  
1174        cost of consumption: 566  
1175 PIPELINE 389,  
1176        between: 226 and 63,  
1177        cost of consumption: 99  
1178 PIPELINE 390,  
1179        between: 106 and 247,  
1180        cost of consumption: 939  
1181 PIPELINE 391,  
1182        between: 126 and 92,  
1183        cost of consumption: 172  
1184 PIPELINE 392,  
1185        between: 24 and 87,  
1186        cost of consumption: 934  
1187 PIPELINE 393,  
1188        between: 220 and 13,  
1189        cost of consumption: 763  
1190 PIPELINE 394,  
1191        between: 60 and 21,  
1192        cost of consumption: 482  
1193 PIPELINE 395,  
1194        between: 240 and 218,  
1195        cost of consumption: 266  
1196 PIPELINE 396,  
1197        between: 150 and 122,  
1198        cost of consumption: 190  
1199 PIPELINE 397,  
1200        between: 36 and 143,  
1201        cost of consumption: 958  
1202 PIPELINE 398,  
1203        between: 233 and 226,  
1204        cost of consumption: 265

1204       COST OF CONSUMPTION: 263  
1205 PIPELINE 399,  
1206       between: 99 and 196,  
1207       cost of consumption: 256  
1208 PIPELINE 400,  
1209       between: 57 and 47,  
1210       cost of consumption: 23  
1211 PIPELINE 401,  
1212       between: 223 and 173,  
1213       cost of consumption: 19  
1214 PIPELINE 402,  
1215       between: 78 and 197,  
1216       cost of consumption: 26  
1217 PIPELINE 403,  
1218       between: 63 and 161,  
1219       cost of consumption: 760  
1220 PIPELINE 404,  
1221       between: 6 and 221,  
1222       cost of consumption: 621  
1223 PIPELINE 405,  
1224       between: 251 and 205,  
1225       cost of consumption: 15  
1226 PIPELINE 406,  
1227       between: 96 and 100,  
1228       cost of consumption: 361  
1229 PIPELINE 407,  
1230       between: 26 and 136,  
1231       cost of consumption: 832  
1232 PIPELINE 408,  
1233       between: 187 and 114,  
1234       cost of consumption: 882  
1235 PIPELINE 409,  
1236       between: 64 and 213,  
1237       cost of consumption: 143  
1238 PIPELINE 410,  
1239       between: 3 and 14,  
1240       cost of consumption: 518  
1241 PIPELINE 411,  
1242       between: 190 and 237,  
1243       cost of consumption: 251  
1244 PIPELINE 412,  
1245       between: 212 and 60,  
1246       cost of consumption: 192  
1247 PIPELINE 413,  
1248       between: 66 and 123,  
1249       cost of consumption: 305  
1250 PIPELINE 414,  
1251       between: 189 and 129,  
1252       cost of consumption: 686  
1253 PIPELINE 415,  
1254       between: 77 and 124,  
1255       cost of consumption: 948  
1256 PIPELINE 416,  
1257       between: 183 and 221,  
1258       cost of consumption: 760  
1259 PIPELINE 417,  
1260       between: 155 and 247,  
1261       cost of consumption: 616  
1262 PIPELINE 418,  
1263       between: 14 and 178,  
1264       cost of consumption: 842  
1265 PIPELINE 419,  
1266       between: 99 and 242,  
1267       cost of consumption: 647  
1268 PIPELINE 420,  
1269       between: 125 and 246,  
1270       cost of consumption: 125  
1271 PIPELINE 421,  
1272       between: 198 and 180,  
1273       cost of consumption: 915  
1274 PIPELINE 422,  
1275       between: 188 and 136,  
1276       cost of consumption: 479  
1277 PIPELINE 423,  
1278       between: 119 and 202,  
1279       cost of consumption: 450  
1280 PIPELINE 424,  
1281       between: 211 and 135,  
1282       cost of consumption: 588  
1283 PIPELINE 425,  
1284       between: 13 and 212,  
1285       cost of consumption: 368  
1286 PIPELINE 426,  
1287       between: 20 and 139,  
1288       cost of consumption: 405  
1289 PIPELINE 427,  
1290       between: 127 and 38,  
1291       cost of consumption: 884  
1292 PIPELINE 428,  
1293       between: 114 and 52,  
1294       cost of consumption: 111  
1295 PIPELINE 429,  
1296       between: 216 and 152,  
1297       cost of consumption: 345  
1298 PIPELINE 430,  
1299       between: 18 and 21,  
1300       cost of consumption: 839  
1301 PIPELINE 431,  
1302       between: 91 and 220,  
1303       cost of consumption: 963  
1304 PIPELINE 432,  
1305       between: 145 and 152,  
1306       cost of consumption: 84  
1307 PIPELINE 433,  
1308       between: 3 and 16,  
1309       cost of consumption: 222  
1310 PIPELINE 434,  
1311       between: 240 and 227,  
1312       cost of consumption: 782  
1313 PIPELINE 435,

1314        between: 95 and 240,  
1315        cost of consumption: 82  
1316 PIPELINE 436,  
1317        between: 75 and 4,  
1318        cost of consumption: 134  
1319 PIPELINE 437,  
1320        between: 19 and 131,  
1321        cost of consumption: 644  
1322 PIPELINE 438,  
1323        between: 211 and 246,  
1324        cost of consumption: 89  
1325 PIPELINE 439,  
1326        between: 69 and 206,  
1327        cost of consumption: 401  
1328 PIPELINE 440,  
1329        between: 169 and 224,  
1330        cost of consumption: 366  
1331 PIPELINE 441,  
1332        between: 4 and 59,  
1333        cost of consumption: 498  
1334 PIPELINE 442,  
1335        between: 18 and 204,  
1336        cost of consumption: 747  
1337 PIPELINE 443,  
1338        between: 169 and 207,  
1339        cost of consumption: 299  
1340 PIPELINE 444,  
1341        between: 11 and 192,  
1342        cost of consumption: 102  
1343 PIPELINE 445,  
1344        between: 244 and 31,  
1345        cost of consumption: 895  
1346 PIPELINE 446,  
1347        between: 177 and 106,  
1348        cost of consumption: 267  
1349 PIPELINE 447,  
1350        between: 250 and 126,  
1351        cost of consumption: 623  
1352 PIPELINE 448,  
1353        between: 106 and 81,  
1354        cost of consumption: 629  
1355 PIPELINE 449,  
1356        between: 14 and 150,  
1357        cost of consumption: 771  
1358 PIPELINE 450,  
1359        between: 74 and 63,  
1360        cost of consumption: 43  
1361 PIPELINE 451,  
1362        between: 155 and 67,  
1363        cost of consumption: 567  
1364 PIPELINE 452,  
1365        between: 201 and 86,  
1366        cost of consumption: 251  
1367 PIPELINE 453,  
1368        between: 143 and 255,  
1369        cost of consumption: 275  
1370 PIPELINE 454,  
1371        between: 101 and 10,  
1372        cost of consumption: 83  
1373 PIPELINE 455,  
1374        between: 30 and 254,  
1375        cost of consumption: 258  
1376 PIPELINE 456,  
1377        between: 200 and 176,  
1378        cost of consumption: 869  
1379 PIPELINE 457,  
1380        between: 119 and 170,  
1381        cost of consumption: 611  
1382 PIPELINE 458,  
1383        between: 169 and 20,  
1384        cost of consumption: 772  
1385 PIPELINE 459,  
1386        between: 209 and 34,  
1387        cost of consumption: 754  
1388 PIPELINE 460,  
1389        between: 199 and 108,  
1390        cost of consumption: 249  
1391 PIPELINE 461,  
1392        between: 157 and 8,  
1393        cost of consumption: 445  
1394 PIPELINE 462,  
1395        between: 175 and 209,  
1396        cost of consumption: 947  
1397 PIPELINE 463,  
1398        between: 142 and 96,  
1399        cost of consumption: 538  
1400 PIPELINE 464,  
1401        between: 60 and 197,  
1402        cost of consumption: 437  
1403 PIPELINE 465,  
1404        between: 170 and 227,  
1405        cost of consumption: 419  
1406 PIPELINE 466,  
1407        between: 55 and 172,  
1408        cost of consumption: 915  
1409 PIPELINE 467,  
1410        between: 47 and 35,  
1411        cost of consumption: 758  
1412 PIPELINE 468,  
1413        between: 165 and 204,  
1414        cost of consumption: 234  
1415 PIPELINE 469,  
1416        between: 108 and 157,  
1417        cost of consumption: 133  
1418 PIPELINE 470,  
1419        between: 201 and 100,  
1420        cost of consumption: 497  
1421 PIPELINE 471,  
1422        between: 102 and 1,      600

1423       cost of consumption: 689  
1424 PIPELINE 472,  
1425       between: 70 and 177,  
1426       cost of consumption: 906  
1427 PIPELINE 473,  
1428       between: 124 and 63,  
1429       cost of consumption: 242  
1430 PIPELINE 474,  
1431       between: 177 and 123,  
1432       cost of consumption: 639  
1433 PIPELINE 475,  
1434       between: 241 and 37,  
1435       cost of consumption: 899  
1436 PIPELINE 476,  
1437       between: 48 and 92,  
1438       cost of consumption: 911  
1439 PIPELINE 477,  
1440       between: 30 and 140,  
1441       cost of consumption: 586  
1442 PIPELINE 478,  
1443       between: 183 and 49,  
1444       cost of consumption: 598  
1445 PIPELINE 479,  
1446       between: 101 and 158,  
1447       cost of consumption: 219  
1448 PIPELINE 480,  
1449       between: 53 and 103,  
1450       cost of consumption: 919  
1451 PIPELINE 481,  
1452       between: 113 and 205,  
1453       cost of consumption: 384  
1454 PIPELINE 482,  
1455       between: 182 and 19,  
1456       cost of consumption: 881  
1457 PIPELINE 483,  
1458       between: 203 and 143,  
1459       cost of consumption: 304  
1460 PIPELINE 484,  
1461       between: 65 and 65,  
1462       cost of consumption: 627  
1463 PIPELINE 485,  
1464       between: 123 and 50,  
1465       cost of consumption: 928  
1466 PIPELINE 486,  
1467       between: 153 and 98,  
1468       cost of consumption: 461  
1469 PIPELINE 487,  
1470       between: 99 and 129,  
1471       cost of consumption: 89  
1472 PIPELINE 488,  
1473       between: 80 and 56,  
1474       cost of consumption: 122  
1475 PIPELINE 489,  
1476       between: 9 and 157,  
1477       cost of consumption: 328  
1478 PIPELINE 490,  
1479       between: 95 and 210,  
1480       cost of consumption: 456  
1481 PIPELINE 491,  
1482       between: 25 and 68,  
1483       cost of consumption: 101  
1484 PIPELINE 492,  
1485       between: 213 and 250,  
1486       cost of consumption: 705  
1487 PIPELINE 493,  
1488       between: 65 and 197,  
1489       cost of consumption: 208  
1490 PIPELINE 494,  
1491       between: 237 and 6,  
1492       cost of consumption: 849  
1493 PIPELINE 495,  
1494       between: 19 and 130,  
1495       cost of consumption: 356  
1496 PIPELINE 496,  
1497       between: 95 and 27,  
1498       cost of consumption: 846  
1499 PIPELINE 497,  
1500       between: 7 and 127,  
1501       cost of consumption: 879  
1502 PIPELINE 498,  
1503       between: 59 and 207,  
1504       cost of consumption: 264  
1505 PIPELINE 499,  
1506       between: 160 and 217,  
1507       cost of consumption: 877  
1508 PIPELINE 500,  
1509       between: 164 and 56,  
1510       cost of consumption: 552  
1511 PIPELINE 501,  
1512       between: 15 and 82,  
1513       cost of consumption: 76  
1514 PIPELINE 502,  
1515       between: 71 and 39,  
1516       cost of consumption: 838  
1517 PIPELINE 503,  
1518       between: 147 and 104,  
1519       cost of consumption: 739  
1520 PIPELINE 504,  
1521       between: 111 and 85,  
1522       cost of consumption: 722  
1523 PIPELINE 505,  
1524       between: 139 and 105,  
1525       cost of consumption: 420  
1526 PIPELINE 506,  
1527       between: 218 and 200,  
1528       cost of consumption: 727  
1529 PIPELINE 507,  
1530       between: 140 and 207,  
1531       cost of consumption: 550  
1532 PTPFLTNF 508.

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1533     between: 190 and 10,
1534     cost of consumption: 822
1535 PIPELINE 509,
1536     between: 41 and 170,
1537     cost of consumption: 487
1538 PIPELINE 510,
1539     between: 50 and 78,
1540     cost of consumption: 407
1541 PIPELINE 511,
1542     between: 13 and 93,
1543     cost of consumption: 849
1544 PIPELINE 512,
1545     between: 44 and 165,
1546     cost of consumption: 544
1547 PIPELINE 513,
1548     between: 69 and 56,
1549     cost of consumption: 17
1550 PIPELINE 514,
1551     between: 35 and 167,
1552     cost of consumption: 918
1553 PIPELINE 515,
1554     between: 8 and 51,
1555     cost of consumption: 871
1556 PIPELINE 516,
1557     between: 111 and 13,
1558     cost of consumption: 151
1559 PIPELINE 517,
1560     between: 242 and 153,
1561     cost of consumption: 214
1562 PIPELINE 518,
1563     between: 243 and 88,
1564     cost of consumption: 144
1565 PIPELINE 519,
1566     between: 196 and 129,
1567     cost of consumption: 763
1568 PIPELINE 520,
1569     between: 110 and 179,
1570     cost of consumption: 393
1571 PIPELINE 521,
1572     between: 81 and 192,
1573     cost of consumption: 839
1574 PIPELINE 522,
1575     between: 133 and 236,
1576     cost of consumption: 196
1577 PIPELINE 523,
1578     between: 225 and 49,
1579     cost of consumption: 516
1580 PIPELINE 524,
1581     between: 165 and 85,
1582     cost of consumption: 356
1583 PIPELINE 525,
1584     between: 190 and 93,
1585     cost of consumption: 207
1586 PIPELINE 526,
1587     between: 65 and 205,
1588     cost of consumption: 420
1589 PIPELINE 527,
1590     between: 139 and 191,
1591     cost of consumption: 190
1592 PIPELINE 528,
1593     between: 165 and 178,
1594     cost of consumption: 742
1595 PIPELINE 529,
1596     between: 200 and 119,
1597     cost of consumption: 687
1598 PIPELINE 530,
1599     between: 150 and 229,
1600     cost of consumption: 547
1601 PIPELINE 531,
1602     between: 179 and 54,
1603     cost of consumption: 571
1604 PIPELINE 532,
1605     between: 45 and 188,
1606     cost of consumption: 832
1607 PIPELINE 533,
1608     between: 76 and 157,
1609     cost of consumption: 161
1610 PIPELINE 534,
1611     between: 163 and 66,
1612     cost of consumption: 294
1613 PIPELINE 535,
1614     between: 162 and 0,
1615     cost of consumption: 652
1616 PIPELINE 536,
1617     between: 212 and 65,
1618     cost of consumption: 297
1619 PIPELINE 537,
1620     between: 20 and 205,
1621     cost of consumption: 304
1622 PIPELINE 538,
1623     between: 237 and 114,
1624     cost of consumption: 218
1625 PIPELINE 539,
1626     between: 30 and 58,
1627     cost of consumption: 209
1628 PIPELINE 540,
1629     between: 208 and 209,
1630     cost of consumption: 407
1631 PIPELINE 541,
1632     between: 54 and 132,
1633     cost of consumption: 269
1634 PIPELINE 542,
1635     between: 93 and 177,
1636     cost of consumption: 289
1637 PIPELINE 543,
1638     between: 112 and 253,
1639     cost of consumption: 6
1640 PIPELINE 544,
1641     between: 180 and 160,
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1642 cost of consumption: 784  
1643 PIPELINE 545,  
1644 between: 78 and 67,  
1645 cost of consumption: 185  
1646 PIPELINE 546,  
1647 between: 69 and 23,  
1648 cost of consumption: 426  
1649 PIPELINE 547,  
1650 between: 9 and 43,  
1651 cost of consumption: 7  
1652 PIPELINE 548,  
1653 between: 140 and 24,  
1654 cost of consumption: 785  
1655 PIPELINE 549,  
1656 between: 193 and 54,  
1657 cost of consumption: 252  
1658 PIPELINE 550,  
1659 between: 110 and 7,  
1660 cost of consumption: 517  
1661 PIPELINE 551,  
1662 between: 0 and 61,  
1663 cost of consumption: 265  
1664 PIPELINE 552,  
1665 between: 200 and 154,  
1666 cost of consumption: 386  
1667 PIPELINE 553,  
1668 between: 77 and 10,  
1669 cost of consumption: 719  
1670 PIPELINE 554,  
1671 between: 110 and 191,  
1672 cost of consumption: 479  
1673 PIPELINE 555,  
1674 between: 210 and 13,  
1675 cost of consumption: 18  
1676 PIPELINE 556,  
1677 between: 54 and 82,  
1678 cost of consumption: 538  
1679 PIPELINE 557,  
1680 between: 219 and 91,  
1681 cost of consumption: 157  
1682 PIPELINE 558,  
1683 between: 78 and 231,  
1684 cost of consumption: 710  
1685 PIPELINE 559,  
1686 between: 50 and 168,  
1687 cost of consumption: 636  
1688 PIPELINE 560,  
1689 between: 81 and 22,  
1690 cost of consumption: 971  
1691 PIPELINE 561,  
1692 between: 65 and 22,  
1693 cost of consumption: 905  
1694 PIPELINE 562,  
1695 between: 181 and 223,  
1696 cost of consumption: 707  
1697 PIPELINE 563,  
1698 between: 218 and 44,  
1699 cost of consumption: 854  
1700 PIPELINE 564,  
1701 between: 252 and 154,  
1702 cost of consumption: 205  
1703 PIPELINE 565,  
1704 between: 191 and 108,  
1705 cost of consumption: 50  
1706 PIPELINE 566,  
1707 between: 196 and 162,  
1708 cost of consumption: 36  
1709 PIPELINE 567,  
1710 between: 225 and 126,  
1711 cost of consumption: 807  
1712 PIPELINE 568,  
1713 between: 42 and 204,  
1714 cost of consumption: 662  
1715 PIPELINE 569,  
1716 between: 139 and 254,  
1717 cost of consumption: 166  
1718 PIPELINE 570,  
1719 between: 34 and 80,  
1720 cost of consumption: 173  
1721 PIPELINE 571,  
1722 between: 193 and 145,  
1723 cost of consumption: 787  
1724 PIPELINE 572,  
1725 between: 157 and 71,  
1726 cost of consumption: 274  
1727 PIPELINE 573,  
1728 between: 19 and 33,  
1729 cost of consumption: 918  
1730 PIPELINE 574,  
1731 between: 148 and 30,  
1732 cost of consumption: 721  
1733 PIPELINE 575,  
1734 between: 212 and 221,  
1735 cost of consumption: 461  
1736 PIPELINE 576,  
1737 between: 33 and 161,  
1738 cost of consumption: 672  
1739 PIPELINE 577,  
1740 between: 192 and 131,  
1741 cost of consumption: 774  
1742 PIPELINE 578,  
1743 between: 186 and 173,  
1744 cost of consumption: 122  
1745 PIPELINE 579,  
1746 between: 155 and 56,  
1747 cost of consumption: 496  
1748 PIPELINE 580,  
1749 between: 37 and 90,  
1750 cost of consumption: 496

1751 PIPELINE 501,  
1752     between: 197 and 27,  
1753     cost of consumption: 986  
1754 PIPELINE 582,  
1755     between: 123 and 184,  
1756     cost of consumption: 225  
1757 PIPELINE 583,  
1758     between: 17 and 204,  
1759     cost of consumption: 946  
1760 PIPELINE 584,  
1761     between: 210 and 96,  
1762     cost of consumption: 216  
1763 PIPELINE 585,  
1764     between: 46 and 53,  
1765     cost of consumption: 157  
1766 PIPELINE 586,  
1767     between: 247 and 86,  
1768     cost of consumption: 487  
1769 PIPELINE 587,  
1770     between: 98 and 23,  
1771     cost of consumption: 738  
1772 PIPELINE 588,  
1773     between: 75 and 209,  
1774     cost of consumption: 415  
1775 PIPELINE 589,  
1776     between: 0 and 109,  
1777     cost of consumption: 223  
1778 PIPELINE 590,  
1779     between: 179 and 146,  
1780     cost of consumption: 145  
1781 PIPELINE 591,  
1782     between: 183 and 87,  
1783     cost of consumption: 149  
1784 PIPELINE 592,  
1785     between: 76 and 210,  
1786     cost of consumption: 133  
1787 PIPELINE 593,  
1788     between: 40 and 227,  
1789     cost of consumption: 801  
1790 PIPELINE 594,  
1791     between: 37 and 182,  
1792     cost of consumption: 706  
1793 PIPELINE 595,  
1794     between: 65 and 228,  
1795     cost of consumption: 47  
1796 PIPELINE 596,  
1797     between: 57 and 219,  
1798     cost of consumption: 221  
1799 PIPELINE 597,  
1800     between: 211 and 61,  
1801     cost of consumption: 260  
1802 PIPELINE 598,  
1803     between: 240 and 136,  
1804     cost of consumption: 318  
1805 PIPELINE 599,  
1806     between: 186 and 136,  
1807     cost of consumption: 699  
1808 PIPELINE 600,  
1809     between: 188 and 60,  
1810     cost of consumption: 269  
1811 PIPELINE 601,  
1812     between: 25 and 243,  
1813     cost of consumption: 844  
1814 PIPELINE 602,  
1815     between: 145 and 63,  
1816     cost of consumption: 910  
1817 PIPELINE 603,  
1818     between: 193 and 103,  
1819     cost of consumption: 738  
1820 PIPELINE 604,  
1821     between: 190 and 140,  
1822     cost of consumption: 592  
1823 PIPELINE 605,  
1824     between: 27 and 205,  
1825     cost of consumption: 836  
1826 PIPELINE 606,  
1827     between: 173 and 7,  
1828     cost of consumption: 984  
1829 PIPELINE 607,  
1830     between: 149 and 218,  
1831     cost of consumption: 53  
1832 PIPELINE 608,  
1833     between: 149 and 203,  
1834     cost of consumption: 462  
1835 PIPELINE 609,  
1836     between: 102 and 133,  
1837     cost of consumption: 678  
1838 PIPELINE 610,  
1839     between: 164 and 66,  
1840     cost of consumption: 546  
1841 PIPELINE 611,  
1842     between: 116 and 91,  
1843     cost of consumption: 261  
1844 PIPELINE 612,  
1845     between: 155 and 236,  
1846     cost of consumption: 100  
1847 PIPELINE 613,  
1848     between: 148 and 173,  
1849     cost of consumption: 339  
1850 PIPELINE 614,  
1851     between: 113 and 107,  
1852     cost of consumption: 920  
1853 PIPELINE 615,  
1854     between: 4 and 134,  
1855     cost of consumption: 53  
1856 PIPELINE 616,  
1857     between: 124 and 51,  
1858     cost of consumption: 244  
1859 PIPELINE 617,  
1860     between: 207 and 201,

1861 cost of consumption: 623  
1862 PIPELINE 618,  
1863 between: 95 and 94,  
1864 cost of consumption: 626  
1865 PIPELINE 619,  
1866 between: 120 and 196,  
1867 cost of consumption: 663  
1868 PIPELINE 620,  
1869 between: 26 and 104,  
1870 cost of consumption: 657  
1871 PIPELINE 621,  
1872 between: 247 and 220,  
1873 cost of consumption: 44  
1874 PIPELINE 622,  
1875 between: 200 and 119,  
1876 cost of consumption: 24  
1877 PIPELINE 623,  
1878 between: 215 and 11,  
1879 cost of consumption: 22  
1880 PIPELINE 624,  
1881 between: 78 and 125,  
1882 cost of consumption: 185  
1883 PIPELINE 625,  
1884 between: 81 and 129,  
1885 cost of consumption: 568  
1886 PIPELINE 626,  
1887 between: 33 and 253,  
1888 cost of consumption: 915  
1889 PIPELINE 627,  
1890 between: 249 and 204,  
1891 cost of consumption: 92  
1892 PIPELINE 628,  
1893 between: 171 and 44,  
1894 cost of consumption: 58  
1895 PIPELINE 629,  
1896 between: 40 and 164,  
1897 cost of consumption: 126  
1898 PIPELINE 630,  
1899 between: 42 and 190,  
1900 cost of consumption: 342  
1901 PIPELINE 631,  
1902 between: 111 and 182,  
1903 cost of consumption: 322  
1904 PIPELINE 632,  
1905 between: 14 and 126,  
1906 cost of consumption: 905  
1907 PIPELINE 633,  
1908 between: 154 and 85,  
1909 cost of consumption: 349  
1910 PIPELINE 634,  
1911 between: 211 and 163,  
1912 cost of consumption: 738  
1913 PIPELINE 635,  
1914 between: 119 and 244,  
1915 cost of consumption: 659  
1916 PIPELINE 636,  
1917 between: 162 and 22,  
1918 cost of consumption: 945  
1919 PIPELINE 637,  
1920 between: 1 and 15,  
1921 cost of consumption: 629  
1922 PIPELINE 638,  
1923 between: 40 and 186,  
1924 cost of consumption: 57  
1925 PIPELINE 639,  
1926 between: 174 and 226,  
1927 cost of consumption: 38  
1928 PIPELINE 640,  
1929 between: 247 and 12,  
1930 cost of consumption: 596  
1931 PIPELINE 641,  
1932 between: 169 and 123,  
1933 cost of consumption: 274  
1934 PIPELINE 642,  
1935 between: 54 and 138,  
1936 cost of consumption: 680  
1937 PIPELINE 643,  
1938 between: 59 and 36,  
1939 cost of consumption: 262  
1940 PIPELINE 644,  
1941 between: 75 and 247,  
1942 cost of consumption: 1001  
1943 PIPELINE 645,  
1944 between: 216 and 110,  
1945 cost of consumption: 518  
1946 PIPELINE 646,  
1947 between: 230 and 17,  
1948 cost of consumption: 212  
1949 PIPELINE 647,  
1950 between: 242 and 18,  
1951 cost of consumption: 971  
1952 PIPELINE 648,  
1953 between: 203 and 58,  
1954 cost of consumption: 765  
1955 PIPELINE 649,  
1956 between: 207 and 232,  
1957 cost of consumption: 919  
1958 PIPELINE 650,  
1959 between: 120 and 224,  
1960 cost of consumption: 387  
1961 PIPELINE 651,  
1962 between: 224 and 137,  
1963 cost of consumption: 879  
1964 PIPELINE 652,  
1965 between: 253 and 191,  
1966 cost of consumption: 81  
1967 PIPELINE 653,  
1968 between: 153 and 250,  
1969 cost of consumption: 717

1970 PIPELINE 654,  
1971      between: 138 and 69,  
1972      cost of consumption: 100  
1973 PIPELINE 655,  
1974      between: 30 and 29,  
1975      cost of consumption: 114  
1976 PIPELINE 656,  
1977      between: 167 and 4,  
1978      cost of consumption: 323  
1979 PIPELINE 657,  
1980      between: 70 and 246,  
1981      cost of consumption: 341  
1982 PIPELINE 658,  
1983      between: 244 and 193,  
1984      cost of consumption: 904  
1985 PIPELINE 659,  
1986      between: 92 and 145,  
1987      cost of consumption: 120  
1988 PIPELINE 660,  
1989      between: 166 and 9,  
1990      cost of consumption: 760  
1991 PIPELINE 661,  
1992      between: 253 and 233,  
1993      cost of consumption: 513  
1994 PIPELINE 662,  
1995      between: 207 and 231,  
1996      cost of consumption: 49  
1997 PIPELINE 663,  
1998      between: 43 and 128,  
1999      cost of consumption: 915  
2000 PIPELINE 664,  
2001      between: 171 and 10,  
2002      cost of consumption: 809  
2003 PIPELINE 665,  
2004      between: 34 and 40,  
2005      cost of consumption: 462  
2006 PIPELINE 666,  
2007      between: 7 and 208,  
2008      cost of consumption: 882  
2009 PIPELINE 667,  
2010      between: 254 and 22,  
2011      cost of consumption: 9  
2012 PIPELINE 668,  
2013      between: 6 and 11,  
2014      cost of consumption: 170  
2015 PIPELINE 669,  
2016      between: 73 and 103,  
2017      cost of consumption: 715  
2018 PIPELINE 670,  
2019      between: 117 and 14,  
2020      cost of consumption: 381  
2021 PIPELINE 671,  
2022      between: 128 and 11,  
2023      cost of consumption: 406  
2024 PIPELINE 672,  
2025      between: 21 and 218,  
2026      cost of consumption: 117  
2027 PIPELINE 673,  
2028      between: 105 and 5,  
2029      cost of consumption: 837  
2030 PIPELINE 674,  
2031      between: 183 and 176,  
2032      cost of consumption: 175  
2033 PIPELINE 675,  
2034      between: 75 and 210,  
2035      cost of consumption: 480  
2036 PIPELINE 676,  
2037      between: 253 and 217,  
2038      cost of consumption: 264  
2039 PIPELINE 677,  
2040      between: 178 and 215,  
2041      cost of consumption: 734  
2042 PIPELINE 678,  
2043      between: 94 and 222,  
2044      cost of consumption: 561  
2045 PIPELINE 679,  
2046      between: 204 and 39,  
2047      cost of consumption: 153  
2048 PIPELINE 680,  
2049      between: 202 and 156,  
2050      cost of consumption: 775  
2051 PIPELINE 681,  
2052      between: 210 and 29,  
2053      cost of consumption: 162  
2054 PIPELINE 682,  
2055      between: 196 and 50,  
2056      cost of consumption: 188  
2057 PIPELINE 683,  
2058      between: 156 and 155,  
2059      cost of consumption: 281  
2060 PIPELINE 684,  
2061      between: 245 and 82,  
2062      cost of consumption: 505  
2063 PIPELINE 685,  
2064      between: 87 and 158,  
2065      cost of consumption: 603  
2066 PIPELINE 686,  
2067      between: 226 and 155,  
2068      cost of consumption: 388  
2069 PIPELINE 687,  
2070      between: 61 and 77,  
2071      cost of consumption: 180  
2072 PIPELINE 688,  
2073      between: 175 and 172,  
2074      cost of consumption: 314  
2075 PIPELINE 689,  
2076      between: 43 and 120,  
2077      cost of consumption: 393  
2078 PIPELINE 690,  
2079      between: 15 and 66.

2080 cost of consumption: 534  
2081 PIPELINE 691,  
2082 between: 1 and 21,  
2083 cost of consumption: 139  
2084 PIPELINE 692,  
2085 between: 254 and 217,  
2086 cost of consumption: 421  
2087 PIPELINE 693,  
2088 between: 213 and 117,  
2089 cost of consumption: 72  
2090 PIPELINE 694,  
2091 between: 177 and 106,  
2092 cost of consumption: 354  
2093 PIPELINE 695,  
2094 between: 61 and 194,  
2095 cost of consumption: 72  
2096 PIPELINE 696,  
2097 between: 155 and 164,  
2098 cost of consumption: 683  
2099 PIPELINE 697,  
2100 between: 211 and 226,  
2101 cost of consumption: 769  
2102 PIPELINE 698,  
2103 between: 226 and 145,  
2104 cost of consumption: 981  
2105 PIPELINE 699,  
2106 between: 207 and 188,  
2107 cost of consumption: 189  
2108 PIPELINE 700,  
2109 between: 227 and 204,  
2110 cost of consumption: 103  
2111 PIPELINE 701,  
2112 between: 148 and 205,  
2113 cost of consumption: 748  
2114 PIPELINE 702,  
2115 between: 98 and 204,  
2116 cost of consumption: 229  
2117 PIPELINE 703,  
2118 between: 98 and 161,  
2119 cost of consumption: 659  
2120 PIPELINE 704,  
2121 between: 253 and 83,  
2122 cost of consumption: 221  
2123 PIPELINE 705,  
2124 between: 235 and 144,  
2125 cost of consumption: 439  
2126 PIPELINE 706,  
2127 between: 118 and 44,  
2128 cost of consumption: 436  
2129 PIPELINE 707,  
2130 between: 157 and 255,  
2131 cost of consumption: 822  
2132 PIPELINE 708,  
2133 between: 17 and 225,  
2134 cost of consumption: 327  
2135 PIPELINE 709,  
2136 between: 49 and 176,  
2137 cost of consumption: 211  
2138 PIPELINE 710,  
2139 between: 201 and 147,  
2140 cost of consumption: 623  
2141 PIPELINE 711,  
2142 between: 163 and 40,  
2143 cost of consumption: 685  
2144 PIPELINE 712,  
2145 between: 147 and 138,  
2146 cost of consumption: 905  
2147 PIPELINE 713,  
2148 between: 91 and 237,  
2149 cost of consumption: 466  
2150 PIPELINE 714,  
2151 between: 153 and 234,  
2152 cost of consumption: 997  
2153 PIPELINE 715,  
2154 between: 66 and 213,  
2155 cost of consumption: 350  
2156 PIPELINE 716,  
2157 between: 172 and 76,  
2158 cost of consumption: 122  
2159 PIPELINE 717,  
2160 between: 187 and 233,  
2161 cost of consumption: 49  
2162 PIPELINE 718,  
2163 between: 172 and 250,  
2164 cost of consumption: 306  
2165 PIPELINE 719,  
2166 between: 46 and 43,  
2167 cost of consumption: 850  
2168 PIPELINE 720,  
2169 between: 109 and 244,  
2170 cost of consumption: 125  
2171 PIPELINE 721,  
2172 between: 119 and 151,  
2173 cost of consumption: 957  
2174 PIPELINE 722,  
2175 between: 79 and 42,  
2176 cost of consumption: 184  
2177 PIPELINE 723,  
2178 between: 243 and 134,  
2179 cost of consumption: 573  
2180 PIPELINE 724,  
2181 between: 57 and 31,  
2182 cost of consumption: 839  
2183 PIPELINE 725,  
2184 between: 209 and 97,  
2185 cost of consumption: 389  
2186 PIPELINE 726,  
2187 between: 250 and 14,  
2188 cost of consumption: 937  
-----

2189 PIPELINE 727,  
2190     between: 79 and 201,  
2191     cost of consumption: 162  
2192 PIPELINE 728,  
2193     between: 163 and 118,  
2194     cost of consumption: 180  
2195 PIPELINE 729,  
2196     between: 216 and 164,  
2197     cost of consumption: 319  
2198 PIPELINE 730,  
2199     between: 189 and 17,  
2200     cost of consumption: 763  
2201 PIPELINE 731,  
2202     between: 54 and 137,  
2203     cost of consumption: 962  
2204 PIPELINE 732,  
2205     between: 214 and 216,  
2206     cost of consumption: 309  
2207 PIPELINE 733,  
2208     between: 1 and 204,  
2209     cost of consumption: 83  
2210 PIPELINE 734,  
2211     between: 25 and 5,  
2212     cost of consumption: 586  
2213 PIPELINE 735,  
2214     between: 28 and 214,  
2215     cost of consumption: 36  
2216 PIPELINE 736,  
2217     between: 244 and 209,  
2218     cost of consumption: 570  
2219 PIPELINE 737,  
2220     between: 24 and 32,  
2221     cost of consumption: 619  
2222 PIPELINE 738,  
2223     between: 37 and 196,  
2224     cost of consumption: 297  
2225 PIPELINE 739,  
2226     between: 44 and 156,  
2227     cost of consumption: 334  
2228 PIPELINE 740,  
2229     between: 94 and 90,  
2230     cost of consumption: 583  
2231 PIPELINE 741,  
2232     between: 132 and 144,  
2233     cost of consumption: 16  
2234 PIPELINE 742,  
2235     between: 65 and 102,  
2236     cost of consumption: 665  
2237 PIPELINE 743,  
2238     between: 41 and 104,  
2239     cost of consumption: 429  
2240 PIPELINE 744,  
2241     between: 151 and 129,  
2242     cost of consumption: 122  
2243 PIPELINE 745,  
2244     between: 37 and 157,  
2245     cost of consumption: 736  
2246 PIPELINE 746,  
2247     between: 20 and 145,  
2248     cost of consumption: 969  
2249 PIPELINE 747,  
2250     between: 17 and 169,  
2251     cost of consumption: 938  
2252 PIPELINE 748,  
2253     between: 215 and 206,  
2254     cost of consumption: 38  
2255 PIPELINE 749,  
2256     between: 20 and 250,  
2257     cost of consumption: 570  
2258 PIPELINE 750,  
2259     between: 245 and 88,  
2260     cost of consumption: 732  
2261 PIPELINE 751,  
2262     between: 231 and 220,  
2263     cost of consumption: 292  
2264 PIPELINE 752,  
2265     between: 99 and 30,  
2266     cost of consumption: 555  
2267 PIPELINE 753,  
2268     between: 183 and 71,  
2269     cost of consumption: 699  
2270 PIPELINE 754,  
2271     between: 215 and 223,  
2272     cost of consumption: 644  
2273 PIPELINE 755,  
2274     between: 252 and 4,  
2275     cost of consumption: 226  
2276 PIPELINE 756,  
2277     between: 247 and 24,  
2278     cost of consumption: 179  
2279 PIPELINE 757,  
2280     between: 196 and 41,  
2281     cost of consumption: 437  
2282 PIPELINE 758,  
2283     between: 177 and 0,  
2284     cost of consumption: 155  
2285 PIPELINE 759,  
2286     between: 98 and 20,  
2287     cost of consumption: 862  
2288 PIPELINE 760,  
2289     between: 175 and 9,  
2290     cost of consumption: 222  
2291 PIPELINE 761,  
2292     between: 87 and 241,  
2293     cost of consumption: 643  
2294 PIPELINE 762,  
2295     between: 142 and 84,  
2296     cost of consumption: 81  
2297 PIPELINE 763,  
2298     between: 44 and 11

2299        between: 47 and 11,  
2300        cost of consumption: 544  
2301        PIPELINE 764,  
2302             between: 50 and 226,  
2303             cost of consumption: 759  
2304        PIPELINE 765,  
2305             between: 186 and 222,  
2306             cost of consumption: 11  
2307        PIPELINE 766,  
2308             between: 223 and 213,  
2309             cost of consumption: 979  
2310        PIPELINE 767,  
2311             between: 149 and 153,  
2312             cost of consumption: 932  
2313        PIPELINE 768,  
2314             between: 245 and 74,  
2315             cost of consumption: 133  
2316        PIPELINE 769,  
2317             between: 36 and 172,  
2318             cost of consumption: 577  
2319        PIPELINE 770,  
2320             between: 77 and 92,  
2321             cost of consumption: 595  
2322        PIPELINE 771,  
2323             between: 206 and 179,  
2324             cost of consumption: 412  
2325        PIPELINE 772,  
2326             between: 44 and 65,  
2327             cost of consumption: 744  
2328        PIPELINE 773,  
2329             between: 168 and 110,  
2330             cost of consumption: 899  
2331        PIPELINE 774,  
2332             between: 108 and 160,  
2333             cost of consumption: 653  
2334        PIPELINE 775,  
2335             between: 14 and 90,  
2336             cost of consumption: 475  
2337        PIPELINE 776,  
2338             between: 181 and 57,  
2339             cost of consumption: 96  
2340        PIPELINE 777,  
2341             between: 115 and 207,  
2342             cost of consumption: 186  
2343        PIPELINE 778,  
2344             between: 91 and 196,  
2345             cost of consumption: 676  
2346        PIPELINE 779,  
2347             between: 67 and 232,  
2348             cost of consumption: 601  
2349        PIPELINE 780,  
2350             between: 63 and 53,  
2351             cost of consumption: 581  
2352        PIPELINE 781,  
2353             between: 69 and 4,  
2354             cost of consumption: 992  
2355        PIPELINE 782,  
2356             between: 60 and 48,  
2357             cost of consumption: 121  
2358        PIPELINE 783,  
2359             between: 135 and 217,  
2360             cost of consumption: 223  
2361        PIPELINE 784,  
2362             between: 221 and 69,  
2363             cost of consumption: 640  
2364        PIPELINE 785,  
2365             between: 21 and 83,  
2366             cost of consumption: 362  
2367        PIPELINE 786,  
2368             between: 43 and 8,  
2369             cost of consumption: 612  
2370        PIPELINE 787,  
2371             between: 23 and 124,  
2372             cost of consumption: 915  
2373        PIPELINE 788,  
2374             between: 156 and 215,  
2375             cost of consumption: 703  
2376        PIPELINE 789,  
2377             between: 107 and 26,  
2378             cost of consumption: 480  
2379        PIPELINE 790,  
2380             between: 231 and 89,  
2381             cost of consumption: 749  
2382        PIPELINE 791,  
2383             between: 191 and 159,  
2384             cost of consumption: 433  
2385        PIPELINE 792,  
2386             between: 74 and 219,  
2387             cost of consumption: 818  
2388        PIPELINE 793,  
2389             between: 23 and 99,  
2390             cost of consumption: 331  
2391        PIPELINE 794,  
2392             between: 81 and 64,  
2393             cost of consumption: 512  
2394        PIPELINE 795,  
2395             between: 44 and 86,  
2396             cost of consumption: 763  
2397        PIPELINE 796,  
2398             between: 98 and 129,  
2399             cost of consumption: 796  
2400        PIPELINE 797,  
2401             between: 209 and 152,  
2402             cost of consumption: 584  
2403        PIPELINE 798,  
2404             between: 15 and 52,  
2405             cost of consumption: 703  
2406        PIPELINE 799,  
2407             between: 17 and 160,  
                cost of consumption: 633

2408 PIPELINE 800,  
2409     between: 252 and 135,  
2410     cost of consumption: 298  
2411 PIPELINE 801,  
2412     between: 29 and 71,  
2413     cost of consumption: 289  
2414 PIPELINE 802,  
2415     between: 65 and 145,  
2416     cost of consumption: 13  
2417 PIPELINE 803,  
2418     between: 150 and 168,  
2419     cost of consumption: 560  
2420 PIPELINE 804,  
2421     between: 196 and 250,  
2422     cost of consumption: 176  
2423 PIPELINE 805,  
2424     between: 55 and 38,  
2425     cost of consumption: 510  
2426 PIPELINE 806,  
2427     between: 254 and 136,  
2428     cost of consumption: 384  
2429 PIPELINE 807,  
2430     between: 205 and 89,  
2431     cost of consumption: 888  
2432 PIPELINE 808,  
2433     between: 24 and 104,  
2434     cost of consumption: 205  
2435 PIPELINE 809,  
2436     between: 58 and 122,  
2437     cost of consumption: 709  
2438 PIPELINE 810,  
2439     between: 118 and 118,  
2440     cost of consumption: 644  
2441 PIPELINE 811,  
2442     between: 11 and 147,  
2443     cost of consumption: 939  
2444 PIPELINE 812,  
2445     between: 64 and 213,  
2446     cost of consumption: 933  
2447 PIPELINE 813,  
2448     between: 80 and 107,  
2449     cost of consumption: 741  
2450 PIPELINE 814,  
2451     between: 195 and 48,  
2452     cost of consumption: 583  
2453 PIPELINE 815,  
2454     between: 118 and 103,  
2455     cost of consumption: 798  
2456 PIPELINE 816,  
2457     between: 128 and 101,  
2458     cost of consumption: 390  
2459 PIPELINE 817,  
2460     between: 11 and 50,  
2461     cost of consumption: 320  
2462 PIPELINE 818,  
2463     between: 46 and 74,  
2464     cost of consumption: 496  
2465 PIPELINE 819,  
2466     between: 134 and 132,  
2467     cost of consumption: 322  
2468 PIPELINE 820,  
2469     between: 126 and 250,  
2470     cost of consumption: 273  
2471 PIPELINE 821,  
2472     between: 254 and 6,  
2473     cost of consumption: 444  
2474 PIPELINE 822,  
2475     between: 196 and 70,  
2476     cost of consumption: 265  
2477 PIPELINE 823,  
2478     between: 28 and 150,  
2479     cost of consumption: 901  
2480 PIPELINE 824,  
2481     between: 29 and 89,  
2482     cost of consumption: 29  
2483 PIPELINE 825,  
2484     between: 23 and 207,  
2485     cost of consumption: 156  
2486 PIPELINE 826,  
2487     between: 56 and 79,  
2488     cost of consumption: 394  
2489 PIPELINE 827,  
2490     between: 226 and 90,  
2491     cost of consumption: 884  
2492 PIPELINE 828,  
2493     between: 229 and 137,  
2494     cost of consumption: 855  
2495 PIPELINE 829,  
2496     between: 80 and 15,  
2497     cost of consumption: 59  
2498 PIPELINE 830,  
2499     between: 54 and 142,  
2500     cost of consumption: 774  
2501 PIPELINE 831,  
2502     between: 146 and 140,  
2503     cost of consumption: 996  
2504 PIPELINE 832,  
2505     between: 129 and 80,  
2506     cost of consumption: 658  
2507 PIPELINE 833,  
2508     between: 70 and 109,  
2509     cost of consumption: 824  
2510 PIPELINE 834,  
2511     between: 118 and 138,  
2512     cost of consumption: 697  
2513 PIPELINE 835,  
2514     between: 214 and 161,  
2515     cost of consumption: 152  
2516 PIPELINE 836,  
2517     between: 157 and 210

2511        between: 151 and 210,  
2512        cost of consumption: 344  
2513 PIPELINE 837,  
2514        between: 202 and 188,  
2515        cost of consumption: 650  
2516 PIPELINE 838,  
2517        between: 42 and 161,  
2518        cost of consumption: 307  
2519 PIPELINE 839,  
2520        between: 212 and 241,  
2521        cost of consumption: 867  
2522 PIPELINE 840,  
2523        between: 2 and 39,  
2524        cost of consumption: 681  
2525 PIPELINE 841,  
2526        between: 43 and 185,  
2527        cost of consumption: 93  
2528 PIPELINE 842,  
2529        between: 90 and 59,  
2530        cost of consumption: 685  
2531 PIPELINE 843,  
2532        between: 207 and 129,  
2533        cost of consumption: 90  
2534 PIPELINE 844,  
2535        between: 218 and 247,  
2536        cost of consumption: 340  
2537 PIPELINE 845,  
2538        between: 62 and 205,  
2539        cost of consumption: 70  
2540 PIPELINE 846,  
2541        between: 114 and 106,  
2542        cost of consumption: 72  
2543 PIPELINE 847,  
2544        between: 245 and 53,  
2545        cost of consumption: 732  
2546 PIPELINE 848,  
2547        between: 210 and 95,  
2548        cost of consumption: 717  
2549 PIPELINE 849,  
2550        between: 57 and 51,  
2551        cost of consumption: 518  
2552 PIPELINE 850,  
2553        between: 175 and 53,  
2554        cost of consumption: 158  
2555 PIPELINE 851,  
2556        between: 179 and 97,  
2557        cost of consumption: 551  
2558 PIPELINE 852,  
2559        between: 67 and 187,  
2560        cost of consumption: 842  
2561 PIPELINE 853,  
2562        between: 35 and 139,  
2563        cost of consumption: 291  
2564 PIPELINE 854,  
2565        between: 113 and 101,  
2566        cost of consumption: 146  
2567 PIPELINE 855,  
2568        between: 72 and 164,  
2569        cost of consumption: 783  
2570 PIPELINE 856,  
2571        between: 193 and 22,  
2572        cost of consumption: 354  
2573 PIPELINE 857,  
2574        between: 20 and 11,  
2575        cost of consumption: 247  
2576 PIPELINE 858,  
2577        between: 35 and 221,  
2578        cost of consumption: 694  
2579 PIPELINE 859,  
2580        between: 211 and 22,  
2581        cost of consumption: 545  
2582 PIPELINE 860,  
2583        between: 117 and 197,  
2584        cost of consumption: 558  
2585 PIPELINE 861,  
2586        between: 62 and 120,  
2587        cost of consumption: 151  
2588 PIPELINE 862,  
2589        between: 192 and 187,  
2590        cost of consumption: 667  
2591 PIPELINE 863,  
2592        between: 126 and 223,  
2593        cost of consumption: 406  
2594 PIPELINE 864,  
2595        between: 188 and 80,  
2596        cost of consumption: 243  
2597 PIPELINE 865,  
2598        between: 242 and 152,  
2599        cost of consumption: 519  
2600 PIPELINE 866,  
2601        between: 244 and 90,  
2602        cost of consumption: 85  
2603 PIPELINE 867,  
2604        between: 97 and 110,  
2605        cost of consumption: 576  
2606 PIPELINE 868,  
2607        between: 3 and 146,  
2608        cost of consumption: 694  
2609 PIPELINE 869,  
2610        between: 4 and 101,  
2611        cost of consumption: 388  
2612 PIPELINE 870,  
2613        between: 56 and 218,  
2614        cost of consumption: 874  
2615 PIPELINE 871,  
2616        between: 162 and 24,  
2617        cost of consumption: 826  
2618 PIPELINE 872,  
2619        between: 108 and 217,  
2620        cost of consumption: 334  
2621 PIPELINE 873,  
2622        between: 162 and 24,  
2623        cost of consumption: 826  
2624 PIPELINE 874,  
2625        between: 108 and 217,  
2626        cost of consumption: 334

2627 PIPELINE 873,  
2628     between: 242 and 87,  
2629     cost of consumption: 429  
2630 PIPELINE 874,  
2631     between: 3 and 19,  
2632     cost of consumption: 845  
2633 PIPELINE 875,  
2634     between: 122 and 5,  
2635     cost of consumption: 973  
2636 PIPELINE 876,  
2637     between: 148 and 250,  
2638     cost of consumption: 175  
2639 PIPELINE 877,  
2640     between: 197 and 91,  
2641     cost of consumption: 574  
2642 PIPELINE 878,  
2643     between: 0 and 95,  
2644     cost of consumption: 896  
2645 PIPELINE 879,  
2646     between: 25 and 99,  
2647     cost of consumption: 501  
2648 PIPELINE 880,  
2649     between: 73 and 156,  
2650     cost of consumption: 608  
2651 PIPELINE 881,  
2652     between: 62 and 62,  
2653     cost of consumption: 368  
2654 PIPELINE 882,  
2655     between: 171 and 170,  
2656     cost of consumption: 681  
2657 PIPELINE 883,  
2658     between: 212 and 157,  
2659     cost of consumption: 32  
2660 PIPELINE 884,  
2661     between: 220 and 160,  
2662     cost of consumption: 764  
2663 PIPELINE 885,  
2664     between: 52 and 26,  
2665     cost of consumption: 665  
2666 PIPELINE 886,  
2667     between: 37 and 175,  
2668     cost of consumption: 219  
2669 PIPELINE 887,  
2670     between: 111 and 116,  
2671     cost of consumption: 775  
2672 PIPELINE 888,  
2673     between: 40 and 116,  
2674     cost of consumption: 222  
2675 PIPELINE 889,  
2676     between: 115 and 142,  
2677     cost of consumption: 249  
2678 PIPELINE 890,  
2679     between: 36 and 215,  
2680     cost of consumption: 453  
2681 PIPELINE 891,  
2682     between: 175 and 21,  
2683     cost of consumption: 683  
2684 PIPELINE 892,  
2685     between: 82 and 192,  
2686     cost of consumption: 790  
2687 PIPELINE 893,  
2688     between: 207 and 149,  
2689     cost of consumption: 83  
2690 PIPELINE 894,  
2691     between: 162 and 113,  
2692     cost of consumption: 667  
2693 PIPELINE 895,  
2694     between: 137 and 166,  
2695     cost of consumption: 134  
2696 PIPELINE 896,  
2697     between: 118 and 203,  
2698     cost of consumption: 645  
2699 PIPELINE 897,  
2700     between: 92 and 58,  
2701     cost of consumption: 985  
2702 PIPELINE 898,  
2703     between: 158 and 99,  
2704     cost of consumption: 373  
2705 PIPELINE 899,  
2706     between: 63 and 214,  
2707     cost of consumption: 203  
2708 PIPELINE 900,  
2709     between: 68 and 250,  
2710     cost of consumption: 858  
2711 PIPELINE 901,  
2712     between: 228 and 169,  
2713     cost of consumption: 559  
2714 PIPELINE 902,  
2715     between: 195 and 252,  
2716     cost of consumption: 128  
2717 PIPELINE 903,  
2718     between: 76 and 203,  
2719     cost of consumption: 245  
2720 PIPELINE 904,  
2721     between: 114 and 109,  
2722     cost of consumption: 630  
2723 PIPELINE 905,  
2724     between: 56 and 247,  
2725     cost of consumption: 180  
2726 PIPELINE 906,  
2727     between: 25 and 109,  
2728     cost of consumption: 159  
2729 PIPELINE 907,  
2730     between: 169 and 201,  
2731     cost of consumption: 794  
2732 PIPELINE 908,  
2733     between: 173 and 104,  
2734     cost of consumption: 653  
2735 PIPELINE 909,

2736        between: 38 and 16/,  
2737        cost of consumption: 627  
2738 PIPELINE 910,  
2739        between: 44 and 235,  
2740        cost of consumption: 566  
2741 PIPELINE 911,  
2742        between: 10 and 208,  
2743        cost of consumption: 423  
2744 PIPELINE 912,  
2745        between: 252 and 147,  
2746        cost of consumption: 563  
2747 PIPELINE 913,  
2748        between: 175 and 223,  
2749        cost of consumption: 14  
2750 PIPELINE 914,  
2751        between: 247 and 81,  
2752        cost of consumption: 156  
2753 PIPELINE 915,  
2754        between: 177 and 137,  
2755        cost of consumption: 747  
2756 PIPELINE 916,  
2757        between: 16 and 163,  
2758        cost of consumption: 800  
2759 PIPELINE 917,  
2760        between: 59 and 76,  
2761        cost of consumption: 881  
2762 PIPELINE 918,  
2763        between: 160 and 250,  
2764        cost of consumption: 409  
2765 PIPELINE 919,  
2766        between: 104 and 32,  
2767        cost of consumption: 953  
2768 PIPELINE 920,  
2769        between: 6 and 76,  
2770        cost of consumption: 108  
2771 PIPELINE 921,  
2772        between: 159 and 86,  
2773        cost of consumption: 324  
2774 PIPELINE 922,  
2775        between: 226 and 83,  
2776        cost of consumption: 927  
2777 PIPELINE 923,  
2778        between: 32 and 2,  
2779        cost of consumption: 406  
2780 PIPELINE 924,  
2781        between: 42 and 250,  
2782        cost of consumption: 839  
2783 PIPELINE 925,  
2784        between: 161 and 171,  
2785        cost of consumption: 241  
2786 PIPELINE 926,  
2787        between: 15 and 187,  
2788        cost of consumption: 92  
2789 PIPELINE 927,  
2790        between: 234 and 246,  
2791        cost of consumption: 680  
2792 PIPELINE 928,  
2793        between: 142 and 150,  
2794        cost of consumption: 690  
2795 PIPELINE 929,  
2796        between: 155 and 254,  
2797        cost of consumption: 138  
2798 PIPELINE 930,  
2799        between: 79 and 5,  
2800        cost of consumption: 927  
2801 PIPELINE 931,  
2802        between: 238 and 164,  
2803        cost of consumption: 909  
2804 PIPELINE 932,  
2805        between: 94 and 134,  
2806        cost of consumption: 344  
2807 PIPELINE 933,  
2808        between: 96 and 167,  
2809        cost of consumption: 355  
2810 PIPELINE 934,  
2811        between: 66 and 209,  
2812        cost of consumption: 181  
2813 PIPELINE 935,  
2814        between: 116 and 114,  
2815        cost of consumption: 152  
2816 PIPELINE 936,  
2817        between: 48 and 129,  
2818        cost of consumption: 91  
2819 PIPELINE 937,  
2820        between: 143 and 107,  
2821        cost of consumption: 858  
2822 PIPELINE 938,  
2823        between: 59 and 249,  
2824        cost of consumption: 240  
2825 PIPELINE 939,  
2826        between: 224 and 148,  
2827        cost of consumption: 239  
2828 PIPELINE 940,  
2829        between: 166 and 227,  
2830        cost of consumption: 828  
2831 PIPELINE 941,  
2832        between: 184 and 210,  
2833        cost of consumption: 920  
2834 PIPELINE 942,  
2835        between: 32 and 48,  
2836        cost of consumption: 583  
2837 PIPELINE 943,  
2838        between: 220 and 144,  
2839        cost of consumption: 78  
2840 PIPELINE 944,  
2841        between: 154 and 210,  
2842        cost of consumption: 711  
2843 PIPELINE 945,  
2844        between: 82 and 71,  
2845        cost of consumption: 689

-- -- -- -- --  
2846 PIPELINE 946,  
2847     between: 181 and 119,  
2848     cost of consumption: 402  
2849 PIPELINE 947,  
2850     between: 211 and 7,  
2851     cost of consumption: 349  
2852 PIPELINE 948,  
2853     between: 232 and 66,  
2854     cost of consumption: 54  
2855 PIPELINE 949,  
2856     between: 148 and 34,  
2857     cost of consumption: 979  
2858 PIPELINE 950,  
2859     between: 62 and 200,  
2860     cost of consumption: 718  
2861 PIPELINE 951,  
2862     between: 237 and 128,  
2863     cost of consumption: 80  
2864 PIPELINE 952,  
2865     between: 64 and 161,  
2866     cost of consumption: 384  
2867 PIPELINE 953,  
2868     between: 26 and 125,  
2869     cost of consumption: 553  
2870 PIPELINE 954,  
2871     between: 155 and 23,  
2872     cost of consumption: 339  
2873 PIPELINE 955,  
2874     between: 237 and 105,  
2875     cost of consumption: 282  
2876 PIPELINE 956,  
2877     between: 177 and 30,  
2878     cost of consumption: 266  
2879 PIPELINE 957,  
2880     between: 246 and 241,  
2881     cost of consumption: 377  
2882 PIPELINE 958,  
2883     between: 166 and 218,  
2884     cost of consumption: 995  
2885 PIPELINE 959,  
2886     between: 80 and 110,  
2887     cost of consumption: 805  
2888 PIPELINE 960,  
2889     between: 142 and 172,  
2890     cost of consumption: 294  
2891 PIPELINE 961,  
2892     between: 175 and 153,  
2893     cost of consumption: 382  
2894 PIPELINE 962,  
2895     between: 163 and 217,  
2896     cost of consumption: 679  
2897 PIPELINE 963,  
2898     between: 198 and 244,  
2899     cost of consumption: 172  
2900 PIPELINE 964,  
2901     between: 122 and 143,  
2902     cost of consumption: 563  
2903 PIPELINE 965,  
2904     between: 1 and 125,  
2905     cost of consumption: 28  
2906 PIPELINE 966,  
2907     between: 206 and 46,  
2908     cost of consumption: 418  
2909 PIPELINE 967,  
2910     between: 19 and 37,  
2911     cost of consumption: 468  
2912 PIPELINE 968,  
2913     between: 95 and 203,  
2914     cost of consumption: 30  
2915 PIPELINE 969,  
2916     between: 237 and 27,  
2917     cost of consumption: 692  
2918 PIPELINE 970,  
2919     between: 158 and 169,  
2920     cost of consumption: 688  
2921 PIPELINE 971,  
2922     between: 23 and 89,  
2923     cost of consumption: 193  
2924 PIPELINE 972,  
2925     between: 16 and 252,  
2926     cost of consumption: 122  
2927 PIPELINE 973,  
2928     between: 171 and 194,  
2929     cost of consumption: 406  
2930 PIPELINE 974,  
2931     between: 194 and 61,  
2932     cost of consumption: 118  
2933 PIPELINE 975,  
2934     between: 241 and 62,  
2935     cost of consumption: 963  
2936 PIPELINE 976,  
2937     between: 136 and 12,  
2938     cost of consumption: 329  
2939 PIPELINE 977,  
2940     between: 62 and 32,  
2941     cost of consumption: 614  
2942 PIPELINE 978,  
2943     between: 229 and 127,  
2944     cost of consumption: 162  
2945 PIPELINE 979,  
2946     between: 102 and 109,  
2947     cost of consumption: 21  
2948 PIPELINE 980,  
2949     between: 85 and 11,  
2950     cost of consumption: 167  
2951 PIPELINE 981,  
2952     between: 240 and 34,  
2953     cost of consumption: 16  
2954 PIPELINE 982,

```
2955     between: 36 and 50,  
2956     cost of consumption: 996  
2957 PIPELINE 983,  
2958     between: 49 and 221,  
2959     cost of consumption: 782  
2960 PIPELINE 984,  
2961     between: 51 and 160,  
2962     cost of consumption: 627  
2963 PIPELINE 985,  
2964     between: 196 and 145,  
2965     cost of consumption: 865  
2966 PIPELINE 986,  
2967     between: 210 and 25,  
2968     cost of consumption: 126  
2969 PIPELINE 987,  
2970     between: 14 and 87,  
2971     cost of consumption: 22  
2972 PIPELINE 988,  
2973     between: 112 and 60,  
2974     cost of consumption: 573  
2975 PIPELINE 989,  
2976     between: 157 and 162,  
2977     cost of consumption: 826  
2978 PIPELINE 990,  
2979     between: 229 and 247,  
2980     cost of consumption: 229  
2981 PIPELINE 991,  
2982     between: 215 and 231,  
2983     cost of consumption: 775  
2984 PIPELINE 992,  
2985     between: 34 and 11,  
2986     cost of consumption: 194  
2987 PIPELINE 993,  
2988     between: 105 and 61,  
2989     cost of consumption: 455  
2990 PIPELINE 994,  
2991     between: 115 and 112,  
2992     cost of consumption: 431  
2993 PIPELINE 995,  
2994     between: 185 and 52,  
2995     cost of consumption: 680  
2996 PIPELINE 996,  
2997     between: 62 and 6,  
2998     cost of consumption: 578  
2999 PIPELINE 997,  
3000     between: 207 and 20.
```

testcase9.txt

```
1 ----- CASE 9 -----
2
3 CASE 9
4 -----
5
6 Given Pipelines:
7 {
8   PIPELINE 0,
9     between: 0 and 0,
10    cost of consumption: 884
11   PIPELINE 1,
12     between: 1 and 1,
13    cost of consumption: 765
14   PIPELINE 2,
15     between: 2 and 2,
16    cost of consumption: 860
17   PIPELINE 3,
18     between: 3 and 3,
19    cost of consumption: 606
20   PIPELINE 4,
21     between: 4 and 4,
22    cost of consumption: 36
23   PIPELINE 5,
24     between: 5 and 5,
25    cost of consumption: 242
26   PIPELINE 6,
27     between: 6 and 6,
28    cost of consumption: 879
29   PIPELINE 7,
30     between: 7 and 7,
31    cost of consumption: 471
32   PIPELINE 8,
33     between: 8 and 8,
34    cost of consumption: 729
35   PIPELINE 9,
36     between: 9 and 9,
37    cost of consumption: 752
38   PIPELINE 10,
39     between: 10 and 10,
40    cost of consumption: 51
41   PIPELINE 11,
42     between: 11 and 11,
43    cost of consumption: 314
44   PIPELINE 12,
45     between: 12 and 12,
46    cost of consumption: 23
47   PIPELINE 13,
48     between: 13 and 13,
49    cost of consumption: 317
50   PIPELINE 14,
51     between: 14 and 14,
52    cost of consumption: 121
53   PIPELINE 15,
54     between: 15 and 15,
55    cost of consumption: 345
56   PIPELINE 16,
57     between: 16 and 16,
58    cost of consumption: 700
59   PIPELINE 17,
60     between: 17 and 17,
61    cost of consumption: 12
62   PIPELINE 18,
63     between: 18 and 18,
64    cost of consumption: 744
65   PIPELINE 19,
66     between: 19 and 19,
67    cost of consumption: 816
68   PIPELINE 20,
69     between: 20 and 20,
70    cost of consumption: 806
71   PIPELINE 21,
72     between: 21 and 21,
73    cost of consumption: 191
74   PIPELINE 22,
75     between: 22 and 22,
76    cost of consumption: 189
77   PIPELINE 23,
78     between: 23 and 23,
79    cost of consumption: 319
80   PIPELINE 24,
81     between: 24 and 24,
82    cost of consumption: 731
83   PIPELINE 25,
84     between: 25 and 25,
85    cost of consumption: 500
86   PIPELINE 26,
87     between: 26 and 26,
88    cost of consumption: 241
89   PIPELINE 27,
90     between: 27 and 27,
91    cost of consumption: 376
92   PIPELINE 28,
93     between: 28 and 28,
94    cost of consumption: 809
95   PIPELINE 29,
96     between: 29 and 29,
97    cost of consumption: 883
98   PIPELINE 30,
99     between: 30 and 30,
100   cost of consumption: 454
101  PIPELINE 31,
102    between: 31 and 31,
103   cost of consumption: 40
104  PIPELINE 32,
105   between: 32 and 32,
106   cost of consumption: 996
107  PIPELINE 33,
108   between: 33 and 33,
109   cost of consumption: 309
110 PIPELINE 34
```

110 PIPELINE 34,  
111     between: 34 and 34,  
112     cost of consumption: 994  
113 PIPELINE 35,  
114     between: 35 and 35,  
115     cost of consumption: 27  
116 PIPELINE 36,  
117     between: 36 and 36,  
118     cost of consumption: 899  
119 PIPELINE 37,  
120     between: 37 and 37,  
121     cost of consumption: 868  
122 PIPELINE 38,  
123     between: 38 and 38,  
124     cost of consumption: 845  
125 PIPELINE 39,  
126     between: 39 and 39,  
127     cost of consumption: 623  
128 PIPELINE 40,  
129     between: 40 and 40,  
130     cost of consumption: 615  
131 PIPELINE 41,  
132     between: 41 and 41,  
133     cost of consumption: 243  
134 PIPELINE 42,  
135     between: 42 and 42,  
136     cost of consumption: 284  
137 PIPELINE 43,  
138     between: 43 and 43,  
139     cost of consumption: 986  
140 PIPELINE 44,  
141     between: 44 and 44,  
142     cost of consumption: 555  
143 PIPELINE 45,  
144     between: 45 and 45,  
145     cost of consumption: 400  
146 PIPELINE 46,  
147     between: 46 and 46,  
148     cost of consumption: 326  
149 PIPELINE 47,  
150     between: 47 and 47,  
151     cost of consumption: 603  
152 PIPELINE 48,  
153     between: 48 and 48,  
154     cost of consumption: 408  
155 PIPELINE 49,  
156     between: 49 and 49,  
157     cost of consumption: 65  
158 PIPELINE 50,  
159     between: 50 and 50,  
160     cost of consumption: 766  
161 PIPELINE 51,  
162     between: 51 and 51,  
163     cost of consumption: 561  
164 PIPELINE 52,  
165     between: 52 and 52,  
166     cost of consumption: 603  
167 PIPELINE 53,  
168     between: 53 and 53,  
169     cost of consumption: 950  
170 PIPELINE 54,  
171     between: 54 and 54,  
172     cost of consumption: 875  
173 PIPELINE 55,  
174     between: 55 and 55,  
175     cost of consumption: 330  
176 PIPELINE 56,  
177     between: 56 and 56,  
178     cost of consumption: 797  
179 PIPELINE 57,  
180     between: 57 and 57,  
181     cost of consumption: 464  
182 PIPELINE 58,  
183     between: 58 and 58,  
184     cost of consumption: 53  
185 PIPELINE 59,  
186     between: 59 and 59,  
187     cost of consumption: 954  
188 PIPELINE 60,  
189     between: 60 and 60,  
190     cost of consumption: 342  
191 PIPELINE 61,  
192     between: 61 and 61,  
193     cost of consumption: 854  
194 PIPELINE 62,  
195     between: 62 and 62,  
196     cost of consumption: 989  
197 PIPELINE 63,  
198     between: 63 and 63,  
199     cost of consumption: 333  
200 PIPELINE 64,  
201     between: 64 and 64,  
202     cost of consumption: 159  
203 PIPELINE 65,  
204     between: 65 and 65,  
205     cost of consumption: 978  
206 PIPELINE 66,  
207     between: 66 and 66,  
208     cost of consumption: 707  
209 PIPELINE 67,  
210     between: 67 and 67,  
211     cost of consumption: 53  
212 PIPELINE 68,  
213     between: 68 and 68,  
214     cost of consumption: 841  
215 PIPELINE 69,  
216     between: 69 and 69,  
217     cost of consumption: 899  
218 PIPELINE 70,  
219     between: 70 and 70.

```
--      .. . . . .  
220      cost of consumption: 23  
221 PIPELINE 71,  
222      between: 71 and 71,  
223      cost of consumption: 804  
224 PIPELINE 72,  
225      between: 72 and 72,  
226      cost of consumption: 138  
227 PIPELINE 73,  
228      between: 73 and 73,  
229      cost of consumption: 302  
230 PIPELINE 74,  
231      between: 74 and 74,  
232      cost of consumption: 785  
233 PIPELINE 75,  
234      between: 75 and 75,  
235      cost of consumption: 40  
236 PIPELINE 76,  
237      between: 76 and 76,  
238      cost of consumption: 50  
239 PIPELINE 77,  
240      between: 77 and 77,  
241      cost of consumption: 458  
242 PIPELINE 78,  
243      between: 78 and 78,  
244      cost of consumption: 638  
245 PIPELINE 79,  
246      between: 79 and 79,  
247      cost of consumption: 805  
248 PIPELINE 80,  
249      between: 80 and 80,  
250      cost of consumption: 871  
251 PIPELINE 81,  
252      between: 81 and 81,  
253      cost of consumption: 751  
254 PIPELINE 82,  
255      between: 82 and 82,  
256      cost of consumption: 361  
257 PIPELINE 83,  
258      between: 83 and 83,  
259      cost of consumption: 469  
260 PIPELINE 84,  
261      between: 84 and 84,  
262      cost of consumption: 696  
263 PIPELINE 85,  
264      between: 85 and 85,  
265      cost of consumption: 232  
266 PIPELINE 86,  
267      between: 86 and 86,  
268      cost of consumption: 146  
269 PIPELINE 87,  
270      between: 87 and 87,  
271      cost of consumption: 841  
272 PIPELINE 88,  
273      between: 88 and 88,  
274      cost of consumption: 691  
275 PIPELINE 89,  
276      between: 89 and 89,  
277      cost of consumption: 195  
278 PIPELINE 90,  
279      between: 90 and 90,  
280      cost of consumption: 790  
281 PIPELINE 91,  
282      between: 91 and 91,  
283      cost of consumption: 380  
284 PIPELINE 92,  
285      between: 92 and 92,  
286      cost of consumption: 396  
287 PIPELINE 93,  
288      between: 93 and 93,  
289      cost of consumption: 774  
290 PIPELINE 94,  
291      between: 94 and 94,  
292      cost of consumption: 61  
293 PIPELINE 95,  
294      between: 95 and 95,  
295      cost of consumption: 550  
296 PIPELINE 96,  
297      between: 96 and 96,  
298      cost of consumption: 100  
299 PIPELINE 97,  
300      between: 97 and 97,  
301      cost of consumption: 115  
302 PIPELINE 98,  
303      between: 98 and 98,  
304      cost of consumption: 950  
305 PIPELINE 99,  
306      between: 99 and 99,  
307      cost of consumption: 288  
308 PIPELINE 100,  
309      between: 100 and 100,  
310      cost of consumption: 10  
311 PIPELINE 101,  
312      between: 101 and 101,  
313      cost of consumption: 968  
314 PIPELINE 102,  
315      between: 102 and 102,  
316      cost of consumption: 87  
317 PIPELINE 103,  
318      between: 103 and 103,  
319      cost of consumption: 143  
320 PIPELINE 104,  
321      between: 104 and 104,  
322      cost of consumption: 618  
323 PIPELINE 105,  
324      between: 105 and 105,  
325      cost of consumption: 219  
326 PIPELINE 106,  
327      between: 106 and 106,  
328      cost of consumption: 178
```

329 PIPELINE 107,  
330     between: 107 and 107,  
331     cost of consumption: 663  
332 PIPELINE 108,  
333     between: 108 and 108,  
334     cost of consumption: 673  
335 PIPELINE 109,  
336     between: 109 and 109,  
337     cost of consumption: 164  
338 PIPELINE 110,  
339     between: 110 and 110,  
340     cost of consumption: 463  
341 PIPELINE 111,  
342     between: 111 and 111,  
343     cost of consumption: 539  
344 PIPELINE 112,  
345     between: 112 and 112,  
346     cost of consumption: 910  
347 PIPELINE 113,  
348     between: 113 and 113,  
349     cost of consumption: 819  
350 PIPELINE 114,  
351     between: 114 and 114,  
352     cost of consumption: 355  
353 PIPELINE 115,  
354     between: 115 and 115,  
355     cost of consumption: 602  
356 PIPELINE 116,  
357     between: 116 and 116,  
358     cost of consumption: 398  
359 PIPELINE 117,  
360     between: 117 and 117,  
361     cost of consumption: 497  
362 PIPELINE 118,  
363     between: 118 and 118,  
364     cost of consumption: 438  
365 PIPELINE 119,  
366     between: 119 and 119,  
367     cost of consumption: 436  
368 PIPELINE 120,  
369     between: 120 and 120,  
370     cost of consumption: 39  
371 PIPELINE 121,  
372     between: 121 and 121,  
373     cost of consumption: 575  
374 PIPELINE 122,  
375     between: 122 and 122,  
376     cost of consumption: 812  
377 PIPELINE 123,  
378     between: 123 and 123,  
379     cost of consumption: 430  
380 PIPELINE 124,  
381     between: 124 and 124,  
382     cost of consumption: 344  
383 PIPELINE 125,  
384     between: 125 and 125,  
385     cost of consumption: 220  
386 PIPELINE 126,  
387     between: 126 and 126,  
388     cost of consumption: 976  
389 PIPELINE 127,  
390     between: 127 and 127,  
391     cost of consumption: 791  
392 PIPELINE 128,  
393     between: 128 and 128,  
394     cost of consumption: 330  
395 PIPELINE 129,  
396     between: 129 and 129,  
397     cost of consumption: 273  
398 PIPELINE 130,  
399     between: 130 and 130,  
400     cost of consumption: 75  
401 PIPELINE 131,  
402     between: 131 and 131,  
403     cost of consumption: 335  
404 PIPELINE 132,  
405     between: 132 and 132,  
406     cost of consumption: 589  
407 PIPELINE 133,  
408     between: 133 and 133,  
409     cost of consumption: 509  
410 PIPELINE 134,  
411     between: 134 and 134,  
412     cost of consumption: 473  
413 PIPELINE 135,  
414     between: 135 and 135,  
415     cost of consumption: 202  
416 PIPELINE 136,  
417     between: 136 and 136,  
418     cost of consumption: 724  
419 PIPELINE 137,  
420     between: 137 and 137,  
421     cost of consumption: 999  
422 PIPELINE 138,  
423     between: 138 and 138,  
424     cost of consumption: 212  
425 PIPELINE 139,  
426     between: 139 and 139,  
427     cost of consumption: 744  
428 PIPELINE 140,  
429     between: 140 and 140,  
430     cost of consumption: 158  
431 PIPELINE 141,  
432     between: 141 and 141,  
433     cost of consumption: 670  
434 PIPELINE 142,  
435     between: 142 and 142,  
436     cost of consumption: 278  
437 PIPELINE 143,  
438     between: 143 and 143

430        between: 143 and 143,  
431        cost of consumption: 63  
440 PIPELINE 144,  
441        between: 144 and 144,  
442        cost of consumption: 836  
443 PIPELINE 145,  
444        between: 145 and 145,  
445        cost of consumption: 628  
446 PIPELINE 146,  
447        between: 146 and 146,  
448        cost of consumption: 12  
449 PIPELINE 147,  
450        between: 147 and 147,  
451        cost of consumption: 230  
452 PIPELINE 148,  
453        between: 148 and 148,  
454        cost of consumption: 472  
455 PIPELINE 149,  
456        between: 149 and 149,  
457        cost of consumption: 797  
458 PIPELINE 150,  
459        between: 150 and 150,  
460        cost of consumption: 13  
461 PIPELINE 151,  
462        between: 151 and 151,  
463        cost of consumption: 506  
464 PIPELINE 152,  
465        between: 152 and 152,  
466        cost of consumption: 367  
467 PIPELINE 153,  
468        between: 153 and 153,  
469        cost of consumption: 820  
470 PIPELINE 154,  
471        between: 154 and 154,  
472        cost of consumption: 932  
473 PIPELINE 155,  
474        between: 155 and 155,  
475        cost of consumption: 59  
476 PIPELINE 156,  
477        between: 156 and 156,  
478        cost of consumption: 387  
479 PIPELINE 157,  
480        between: 157 and 157,  
481        cost of consumption: 255  
482 PIPELINE 158,  
483        between: 158 and 158,  
484        cost of consumption: 845  
485 PIPELINE 159,  
486        between: 159 and 159,  
487        cost of consumption: 713  
488 PIPELINE 160,  
489        between: 160 and 160,  
490        cost of consumption: 523  
491 PIPELINE 161,  
492        between: 161 and 161,  
493        cost of consumption: 267  
494 PIPELINE 162,  
495        between: 162 and 162,  
496        cost of consumption: 395  
497 PIPELINE 163,  
498        between: 163 and 163,  
499        cost of consumption: 459  
500 PIPELINE 164,  
501        between: 164 and 164,  
502        cost of consumption: 772  
503 PIPELINE 165,  
504        between: 165 and 165,  
505        cost of consumption: 864  
506 PIPELINE 166,  
507        between: 166 and 166,  
508        cost of consumption: 8  
509 PIPELINE 167,  
510        between: 167 and 167,  
511        cost of consumption: 491  
512 PIPELINE 168,  
513        between: 168 and 168,  
514        cost of consumption: 210  
515 PIPELINE 169,  
516        between: 169 and 169,  
517        cost of consumption: 215  
518 PIPELINE 170,  
519        between: 170 and 170,  
520        cost of consumption: 230  
521 PIPELINE 171,  
522        between: 171 and 171,  
523        cost of consumption: 363  
524 PIPELINE 172,  
525        between: 172 and 172,  
526        cost of consumption: 232  
527 PIPELINE 173,  
528        between: 173 and 173,  
529        cost of consumption: 855  
530 PIPELINE 174,  
531        between: 174 and 174,  
532        cost of consumption: 773  
533 PIPELINE 175,  
534        between: 175 and 175,  
535        cost of consumption: 416  
536 PIPELINE 176,  
537        between: 176 and 176,  
538        cost of consumption: 830  
539 PIPELINE 177,  
540        between: 177 and 177,  
541        cost of consumption: 781  
542 PIPELINE 178,  
543        between: 178 and 178,  
544        cost of consumption: 993  
545 PIPELINE 179,  
546        between: 179 and 179,  
547        cost of consumption: 298

548 PIPELINE 180,  
549     between: 180 and 180,  
550     cost of consumption: 925  
551 PIPELINE 181,  
552     between: 181 and 181,  
553     cost of consumption: 1001  
554 PIPELINE 182,  
555     between: 182 and 182,  
556     cost of consumption: 799  
557 PIPELINE 183,  
558     between: 183 and 183,  
559     cost of consumption: 288  
560 PIPELINE 184,  
561     between: 184 and 184,  
562     cost of consumption: 169  
563 PIPELINE 185,  
564     between: 185 and 185,  
565     cost of consumption: 78  
566 PIPELINE 186,  
567     between: 186 and 186,  
568     cost of consumption: 694  
569 PIPELINE 187,  
570     between: 187 and 187,  
571     cost of consumption: 551  
572 PIPELINE 188,  
573     between: 188 and 188,  
574     cost of consumption: 328  
575 PIPELINE 189,  
576     between: 189 and 189,  
577     cost of consumption: 534  
578 PIPELINE 190,  
579     between: 190 and 190,  
580     cost of consumption: 611  
581 PIPELINE 191,  
582     between: 191 and 191,  
583     cost of consumption: 199  
584 PIPELINE 192,  
585     between: 192 and 192,  
586     cost of consumption: 797  
587 PIPELINE 193,  
588     between: 193 and 193,  
589     cost of consumption: 1002  
590 PIPELINE 194,  
591     between: 194 and 194,  
592     cost of consumption: 653  
593 PIPELINE 195,  
594     between: 195 and 195,  
595     cost of consumption: 916  
596 PIPELINE 196,  
597     between: 196 and 196,  
598     cost of consumption: 213  
599 PIPELINE 197,  
600     between: 197 and 197,  
601     cost of consumption: 657  
602 PIPELINE 198,  
603     between: 198 and 198,  
604     cost of consumption: 402  
605 PIPELINE 199,  
606     between: 199 and 199,  
607     cost of consumption: 418  
608 PIPELINE 200,  
609     between: 200 and 200,  
610     cost of consumption: 219  
611 PIPELINE 201,  
612     between: 201 and 201,  
613     cost of consumption: 979  
614 PIPELINE 202,  
615     between: 202 and 202,  
616     cost of consumption: 128  
617 PIPELINE 203,  
618     between: 203 and 203,  
619     cost of consumption: 799  
620 PIPELINE 204,  
621     between: 204 and 204,  
622     cost of consumption: 181  
623 PIPELINE 205,  
624     between: 205 and 205,  
625     cost of consumption: 896  
626 PIPELINE 206,  
627     between: 206 and 206,  
628     cost of consumption: 210  
629 PIPELINE 207,  
630     between: 207 and 207,  
631     cost of consumption: 6  
632 PIPELINE 208,  
633     between: 208 and 208,  
634     cost of consumption: 24  
635 PIPELINE 209,  
636     between: 209 and 209,  
637     cost of consumption: 550  
638 PIPELINE 210,  
639     between: 210 and 210,  
640     cost of consumption: 651  
641 PIPELINE 211,  
642     between: 211 and 211,  
643     cost of consumption: 945  
644 PIPELINE 212,  
645     between: 212 and 212,  
646     cost of consumption: 546  
647 PIPELINE 213,  
648     between: 213 and 213,  
649     cost of consumption: 446  
650 PIPELINE 214,  
651     between: 214 and 214,  
652     cost of consumption: 228  
653 PIPELINE 215,  
654     between: 215 and 215,  
655     cost of consumption: 710  
656 PIPELINE 216,  
657     between: 216 and 216

551        between: z16 and z16,  
552        cost of consumption: 519  
553 PIPELINE 217,  
554        between: 217 and 217,  
555        cost of consumption: 917  
556 PIPELINE 218,  
557        between: 218 and 218,  
558        cost of consumption: 609  
559 PIPELINE 219,  
560        between: 219 and 219,  
561        cost of consumption: 195  
562 PIPELINE 220,  
563        between: 220 and 220,  
564        cost of consumption: 798  
565 PIPELINE 221,  
566        between: 221 and 221,  
567        cost of consumption: 215  
568 PIPELINE 222,  
569        between: 222 and 222,  
570        cost of consumption: 389  
571 PIPELINE 223,  
572        between: 223 and 223,  
573        cost of consumption: 942  
574 PIPELINE 224,  
575        between: 224 and 224,  
576        cost of consumption: 212  
577 PIPELINE 225,  
578        between: 225 and 225,  
579        cost of consumption: 37  
580 PIPELINE 226,  
581        between: 226 and 226,  
582        cost of consumption: 205  
583 PIPELINE 227,  
584        between: 227 and 227,  
585        cost of consumption: 420  
586 PIPELINE 228,  
587        between: 228 and 228,  
588        cost of consumption: 41  
589 PIPELINE 229,  
590        between: 229 and 229,  
591        cost of consumption: 602  
592 PIPELINE 230,  
593        between: 230 and 230,  
594        cost of consumption: 185  
595 PIPELINE 231,  
596        between: 231 and 231,  
597        cost of consumption: 608  
598 PIPELINE 232,  
599        between: 232 and 232,  
600        cost of consumption: 928  
601 PIPELINE 233,  
602        between: 233 and 233,  
603        cost of consumption: 308  
604 PIPELINE 234,  
605        between: 234 and 234,  
606        cost of consumption: 402  
607 PIPELINE 235,  
608        between: 235 and 235,  
609        cost of consumption: 104  
610 PIPELINE 236,  
611        between: 236 and 236,  
612        cost of consumption: 552  
613 PIPELINE 237,  
614        between: 237 and 237,  
615        cost of consumption: 959  
616 PIPELINE 238,  
617        between: 238 and 238,  
618        cost of consumption: 458  
619 PIPELINE 239,  
620        between: 239 and 239,  
621        cost of consumption: 571  
622 PIPELINE 240,  
623        between: 240 and 240,  
624        cost of consumption: 504  
625 PIPELINE 241,  
626        between: 241 and 241,  
627        cost of consumption: 104  
628 PIPELINE 242,  
629        between: 242 and 242,  
630        cost of consumption: 511  
631 PIPELINE 243,  
632        between: 243 and 243,  
633        cost of consumption: 397  
634 PIPELINE 244,  
635        between: 244 and 244,  
636        cost of consumption: 897  
637 PIPELINE 245,  
638        between: 245 and 245,  
639        cost of consumption: 86  
640 PIPELINE 246,  
641        between: 246 and 246,  
642        cost of consumption: 455  
643 PIPELINE 247,  
644        between: 247 and 247,  
645        cost of consumption: 764  
646 PIPELINE 248,  
647        between: 248 and 248,  
648        cost of consumption: 350  
649 PIPELINE 249,  
650        between: 249 and 249,  
651        cost of consumption: 59  
652 PIPELINE 250,  
653        between: 250 and 250,  
654        cost of consumption: 954  
655 PIPELINE 251,  
656        between: 251 and 251,  
657        cost of consumption: 496  
658 PIPELINE 252,  
659        between: 252 and 252,  
660        cost of consumption: 621

767 PIPELINE 253,  
768     between: 253 and 253,  
769     cost of consumption: 338  
770 PIPELINE 254,  
771     between: 254 and 254,  
772     cost of consumption: 785  
773 PIPELINE 255,  
774     between: 255 and 255,  
775     cost of consumption: 829  
776 PIPELINE 256,  
777     between: 256 and 256,  
778     cost of consumption: 722  
779 PIPELINE 257,  
780     between: 257 and 257,  
781     cost of consumption: 986  
782 PIPELINE 258,  
783     between: 258 and 258,  
784     cost of consumption: 596  
785 PIPELINE 259,  
786     between: 259 and 259,  
787     cost of consumption: 111  
788 PIPELINE 260,  
789     between: 260 and 260,  
790     cost of consumption: 935  
791 PIPELINE 261,  
792     between: 261 and 261,  
793     cost of consumption: 129  
794 PIPELINE 262,  
795     between: 262 and 262,  
796     cost of consumption: 714  
797 PIPELINE 263,  
798     between: 263 and 263,  
799     cost of consumption: 859  
800 PIPELINE 264,  
801     between: 264 and 264,  
802     cost of consumption: 432  
803 PIPELINE 265,  
804     between: 265 and 265,  
805     cost of consumption: 463  
806 PIPELINE 266,  
807     between: 266 and 266,  
808     cost of consumption: 310  
809 PIPELINE 267,  
810     between: 267 and 267,  
811     cost of consumption: 331  
812 PIPELINE 268,  
813     between: 268 and 268,  
814     cost of consumption: 769  
815 PIPELINE 269,  
816     between: 269 and 269,  
817     cost of consumption: 763  
818 PIPELINE 270,  
819     between: 270 and 270,  
820     cost of consumption: 898  
821 PIPELINE 271,  
822     between: 271 and 271,  
823     cost of consumption: 620  
824 PIPELINE 272,  
825     between: 272 and 272,  
826     cost of consumption: 215  
827 PIPELINE 273,  
828     between: 273 and 273,  
829     cost of consumption: 756  
830 PIPELINE 274,  
831     between: 274 and 274,  
832     cost of consumption: 364  
833 PIPELINE 275,  
834     between: 275 and 275,  
835     cost of consumption: 107  
836 PIPELINE 276,  
837     between: 276 and 276,  
838     cost of consumption: 190  
839 PIPELINE 277,  
840     between: 277 and 277,  
841     cost of consumption: 814  
842 PIPELINE 278,  
843     between: 278 and 278,  
844     cost of consumption: 866  
845 PIPELINE 279,  
846     between: 279 and 279,  
847     cost of consumption: 535  
848 PIPELINE 280,  
849     between: 280 and 280,  
850     cost of consumption: 868  
851 PIPELINE 281,  
852     between: 281 and 281,  
853     cost of consumption: 815  
854 PIPELINE 282,  
855     between: 282 and 282,  
856     cost of consumption: 378  
857 PIPELINE 283,  
858     between: 283 and 283,  
859     cost of consumption: 485  
860 PIPELINE 284,  
861     between: 284 and 284,  
862     cost of consumption: 148  
863 PIPELINE 285,  
864     between: 285 and 285,  
865     cost of consumption: 159  
866 PIPELINE 286,  
867     between: 286 and 286,  
868     cost of consumption: 661  
869 PIPELINE 287,  
870     between: 287 and 287,  
871     cost of consumption: 218  
872 PIPELINE 288,  
873     between: 288 and 288,  
874     cost of consumption: 140  
875 PIPELINE 289,  
--- . . . . .

876        between: 289 and 289,  
877        cost of consumption: 604  
878 PIPELINE 290,  
879        between: 290 and 290,  
880        cost of consumption: 324  
881 PIPELINE 291,  
882        between: 291 and 291,  
883        cost of consumption: 422  
884 PIPELINE 292,  
885        between: 292 and 292,  
886        cost of consumption: 728  
887 PIPELINE 293,  
888        between: 293 and 293,  
889        cost of consumption: 385  
890 PIPELINE 294,  
891        between: 294 and 294,  
892        cost of consumption: 276  
893 PIPELINE 295,  
894        between: 295 and 295,  
895        cost of consumption: 508  
896 PIPELINE 296,  
897        between: 296 and 296,  
898        cost of consumption: 195  
899 PIPELINE 297,  
900        between: 297 and 297,  
901        cost of consumption: 934  
902 PIPELINE 298,  
903        between: 298 and 298,  
904        cost of consumption: 834  
905 PIPELINE 299,  
906        between: 299 and 299,  
907        cost of consumption: 311  
908 PIPELINE 300,  
909        between: 300 and 300,  
910        cost of consumption: 44  
911 PIPELINE 301,  
912        between: 301 and 301,  
913        cost of consumption: 79  
914 PIPELINE 302,  
915        between: 302 and 302,  
916        cost of consumption: 926  
917 PIPELINE 303,  
918        between: 303 and 303,  
919        cost of consumption: 254  
920 PIPELINE 304,  
921        between: 304 and 304,  
922        cost of consumption: 831  
923 PIPELINE 305,  
924        between: 305 and 305,  
925        cost of consumption: 285  
926 PIPELINE 306,  
927        between: 306 and 306,  
928        cost of consumption: 357  
929 PIPELINE 307,  
930        between: 307 and 307,  
931        cost of consumption: 16  
932 PIPELINE 308,  
933        between: 308 and 308,  
934        cost of consumption: 447  
935 PIPELINE 309,  
936        between: 309 and 309,  
937        cost of consumption: 218  
938 PIPELINE 310,  
939        between: 310 and 310,  
940        cost of consumption: 898  
941 PIPELINE 311,  
942        between: 311 and 311,  
943        cost of consumption: 662  
944 PIPELINE 312,  
945        between: 312 and 312,  
946        cost of consumption: 381  
947 PIPELINE 313,  
948        between: 313 and 313,  
949        cost of consumption: 272  
950 PIPELINE 314,  
951        between: 314 and 314,  
952        cost of consumption: 494  
953 PIPELINE 315,  
954        between: 315 and 315,  
955        cost of consumption: 876  
956 PIPELINE 316,  
957        between: 316 and 316,  
958        cost of consumption: 778  
959 PIPELINE 317,  
960        between: 317 and 317,  
961        cost of consumption: 150  
962 PIPELINE 318,  
963        between: 318 and 318,  
964        cost of consumption: 89  
965 PIPELINE 319,  
966        between: 319 and 319,  
967        cost of consumption: 913  
968 PIPELINE 320,  
969        between: 320 and 320,  
970        cost of consumption: 102  
971 PIPELINE 321,  
972        between: 321 and 321,  
973        cost of consumption: 760  
974 PIPELINE 322,  
975        between: 322 and 322,  
976        cost of consumption: 330  
977 PIPELINE 323,  
978        between: 323 and 323,  
979        cost of consumption: 825  
980 PIPELINE 324,  
981        between: 324 and 324,  
982        cost of consumption: 140  
983 PIPELINE 325,  
984        between: 325 and 325,  
985        cost of consumption: 954

985       cost of consumption: 331  
986 PIPELINE 326,  
987       between: 326 and 326,  
988       cost of consumption: 680  
989 PIPELINE 327,  
990       between: 327 and 327,  
991       cost of consumption: 682  
992 PIPELINE 328,  
993       between: 328 and 328,  
994       cost of consumption: 883  
995 PIPELINE 329,  
996       between: 329 and 329,  
997       cost of consumption: 510  
998 PIPELINE 330,  
999       between: 330 and 330,  
1000      cost of consumption: 988  
1001 PIPELINE 331,  
1002       between: 331 and 331,  
1003       cost of consumption: 274  
1004 PIPELINE 332,  
1005       between: 332 and 332,  
1006       cost of consumption: 584  
1007 PIPELINE 333,  
1008       between: 333 and 333,  
1009       cost of consumption: 261  
1010 PIPELINE 334,  
1011       between: 334 and 334,  
1012       cost of consumption: 524  
1013 PIPELINE 335,  
1014       between: 335 and 335,  
1015       cost of consumption: 762  
1016 PIPELINE 336,  
1017       between: 336 and 336,  
1018       cost of consumption: 894  
1019 PIPELINE 337,  
1020       between: 337 and 337,  
1021       cost of consumption: 876  
1022 PIPELINE 338,  
1023       between: 338 and 338,  
1024       cost of consumption: 125  
1025 PIPELINE 339,  
1026       between: 339 and 339,  
1027       cost of consumption: 688  
1028 PIPELINE 340,  
1029       between: 340 and 340,  
1030       cost of consumption: 441  
1031 PIPELINE 341,  
1032       between: 341 and 341,  
1033       cost of consumption: 371  
1034 PIPELINE 342,  
1035       between: 342 and 342,  
1036       cost of consumption: 345  
1037 PIPELINE 343,  
1038       between: 343 and 343,  
1039       cost of consumption: 817  
1040 PIPELINE 344,  
1041       between: 344 and 344,  
1042       cost of consumption: 638  
1043 PIPELINE 345,  
1044       between: 345 and 345,  
1045       cost of consumption: 835  
1046 PIPELINE 346,  
1047       between: 346 and 346,  
1048       cost of consumption: 689  
1049 PIPELINE 347,  
1050       between: 347 and 347,  
1051       cost of consumption: 411  
1052 PIPELINE 348,  
1053       between: 348 and 348,  
1054       cost of consumption: 980  
1055 PIPELINE 349,  
1056       between: 349 and 349,  
1057       cost of consumption: 773  
1058 PIPELINE 350,  
1059       between: 350 and 350,  
1060       cost of consumption: 671  
1061 PIPELINE 351,  
1062       between: 351 and 351,  
1063       cost of consumption: 77  
1064 PIPELINE 352,  
1065       between: 352 and 352,  
1066       cost of consumption: 529  
1067 PIPELINE 353,  
1068       between: 353 and 353,  
1069       cost of consumption: 348  
1070 PIPELINE 354,  
1071       between: 354 and 354,  
1072       cost of consumption: 250  
1073 PIPELINE 355,  
1074       between: 355 and 355,  
1075       cost of consumption: 16  
1076 PIPELINE 356,  
1077       between: 356 and 356,  
1078       cost of consumption: 649  
1079 PIPELINE 357,  
1080       between: 357 and 357,  
1081       cost of consumption: 925  
1082 PIPELINE 358,  
1083       between: 358 and 358,  
1084       cost of consumption: 46  
1085 PIPELINE 359,  
1086       between: 359 and 359,  
1087       cost of consumption: 879  
1088 PIPELINE 360,  
1089       between: 360 and 360,  
1090       cost of consumption: 782  
1091 PIPELINE 361,  
1092       between: 361 and 361,  
1093       cost of consumption: 381  
1094 PIPELINE 362,

1095        between: 362 and 362,  
1096        cost of consumption: 149  
1097 PIPELINE 363,  
1098        between: 363 and 363,  
1099        cost of consumption: 714  
1100 PIPELINE 364,  
1101        between: 364 and 364,  
1102        cost of consumption: 990  
1103 PIPELINE 365,  
1104        between: 365 and 365,  
1105        cost of consumption: 668  
1106 PIPELINE 366,  
1107        between: 366 and 366,  
1108        cost of consumption: 471  
1109 PIPELINE 367,  
1110        between: 367 and 367,  
1111        cost of consumption: 231  
1112 PIPELINE 368,  
1113        between: 368 and 368,  
1114        cost of consumption: 891  
1115 PIPELINE 369,  
1116        between: 369 and 369,  
1117        cost of consumption: 944  
1118 PIPELINE 370,  
1119        between: 370 and 370,  
1120        cost of consumption: 914  
1121 PIPELINE 371,  
1122        between: 371 and 371,  
1123        cost of consumption: 327  
1124 PIPELINE 372,  
1125        between: 372 and 372,  
1126        cost of consumption: 310  
1127 PIPELINE 373,  
1128        between: 373 and 373,  
1129        cost of consumption: 254  
1130 PIPELINE 374,  
1131        between: 374 and 374,  
1132        cost of consumption: 140  
1133 PIPELINE 375,  
1134        between: 375 and 375,  
1135        cost of consumption: 295  
1136 PIPELINE 376,  
1137        between: 376 and 376,  
1138        cost of consumption: 84  
1139 PIPELINE 377,  
1140        between: 377 and 377,  
1141        cost of consumption: 824  
1142 PIPELINE 378,  
1143        between: 378 and 378,  
1144        cost of consumption: 53  
1145 PIPELINE 379,  
1146        between: 379 and 379,  
1147        cost of consumption: 412  
1148 PIPELINE 380,  
1149        between: 380 and 380,  
1150        cost of consumption: 944  
1151 PIPELINE 381,  
1152        between: 381 and 381,  
1153        cost of consumption: 719  
1154 PIPELINE 382,  
1155        between: 382 and 382,  
1156        cost of consumption: 836  
1157 PIPELINE 383,  
1158        between: 383 and 383,  
1159        cost of consumption: 820  
1160 PIPELINE 384,  
1161        between: 384 and 384,  
1162        cost of consumption: 414  
1163 PIPELINE 385,  
1164        between: 385 and 385,  
1165        cost of consumption: 81  
1166 PIPELINE 386,  
1167        between: 386 and 386,  
1168        cost of consumption: 184  
1169 PIPELINE 387,  
1170        between: 387 and 387,  
1171        cost of consumption: 59  
1172 PIPELINE 388,  
1173        between: 388 and 388,  
1174        cost of consumption: 354  
1175 PIPELINE 389,  
1176        between: 389 and 389,  
1177        cost of consumption: 577  
1178 PIPELINE 390,  
1179        between: 390 and 390,  
1180        cost of consumption: 933  
1181 PIPELINE 391,  
1182        between: 391 and 391,  
1183        cost of consumption: 131  
1184 PIPELINE 392,  
1185        between: 392 and 392,  
1186        cost of consumption: 953  
1187 PIPELINE 393,  
1188        between: 393 and 393,  
1189        cost of consumption: 429  
1190 PIPELINE 394,  
1191        between: 394 and 394,  
1192        cost of consumption: 840  
1193 PIPELINE 395,  
1194        between: 395 and 395,  
1195        cost of consumption: 938  
1196 PIPELINE 396,  
1197        between: 396 and 396,  
1198        cost of consumption: 92  
1199 PIPELINE 397,  
1200        between: 397 and 397,  
1201        cost of consumption: 659  
1202 PIPELINE 398,  
1203        between: 398 and 398,  
1204        cost of consumption: 164

1294       COST OF CONSUMPTION: 104  
1295 PIPELINE 399,  
1296       between: 399 and 399,  
1297       cost of consumption: 978  
1298 PIPELINE 400,  
1299       between: 400 and 400,  
1300       cost of consumption: 950  
1301 PIPELINE 401,  
1302       between: 401 and 401,  
1303       cost of consumption: 73  
1304 PIPELINE 402,  
1305       between: 402 and 402,  
1306       cost of consumption: 301  
1307 PIPELINE 403,  
1308       between: 403 and 403,  
1309       cost of consumption: 255  
1310 PIPELINE 404,  
1311       between: 404 and 404,  
1312       cost of consumption: 675  
1313 PIPELINE 405,  
1314       between: 405 and 405,  
1315       cost of consumption: 788  
1316 PIPELINE 406,  
1317       between: 406 and 406,  
1318       cost of consumption: 545  
1319 PIPELINE 407,  
1320       between: 407 and 407,  
1321       cost of consumption: 754  
1322 PIPELINE 408,  
1323       between: 408 and 408,  
1324       cost of consumption: 959  
1325 PIPELINE 409,  
1326       between: 409 and 409,  
1327       cost of consumption: 593  
1328 PIPELINE 410,  
1329       between: 410 and 410,  
1330       cost of consumption: 161  
1331 PIPELINE 411,  
1332       between: 411 and 411,  
1333       cost of consumption: 898  
1334 PIPELINE 412,  
1335       between: 412 and 412,  
1336       cost of consumption: 659  
1337 PIPELINE 413,  
1338       between: 413 and 413,  
1339       cost of consumption: 993  
1340 PIPELINE 414,  
1341       between: 414 and 414,  
1342       cost of consumption: 66  
1343 PIPELINE 415,  
1344       between: 415 and 415,  
1345       cost of consumption: 68  
1346 PIPELINE 416,  
1347       between: 416 and 416,  
1348       cost of consumption: 421  
1349 PIPELINE 417,  
1350       between: 417 and 417,  
1351       cost of consumption: 245  
1352 PIPELINE 418,  
1353       between: 418 and 418,  
1354       cost of consumption: 474  
1355 PIPELINE 419,  
1356       between: 419 and 419,  
1357       cost of consumption: 770  
1358 PIPELINE 420,  
1359       between: 420 and 420,  
1360       cost of consumption: 817  
1361 PIPELINE 421,  
1362       between: 421 and 421,  
1363       cost of consumption: 755  
1364 PIPELINE 422,  
1365       between: 422 and 422,  
1366       cost of consumption: 249  
1367 PIPELINE 423,  
1368       between: 423 and 423,  
1369       cost of consumption: 117  
1370 PIPELINE 424,  
1371       between: 424 and 424,  
1372       cost of consumption: 179  
1373 PIPELINE 425,  
1374       between: 425 and 425,  
1375       cost of consumption: 84  
1376 PIPELINE 426,  
1377       between: 426 and 426,  
1378       cost of consumption: 403  
1379 PIPELINE 427,  
1380       between: 427 and 427,  
1381       cost of consumption: 619  
1382 PIPELINE 428,  
1383       between: 428 and 428,  
1384       cost of consumption: 90  
1385 PIPELINE 429,  
1386       between: 429 and 429,  
1387       cost of consumption: 562  
1388 PIPELINE 430,  
1389       between: 430 and 430,  
1390       cost of consumption: 944  
1391 PIPELINE 431,  
1392       between: 431 and 431,  
1393       cost of consumption: 35  
1394 PIPELINE 432,  
1395       between: 432 and 432,  
1396       cost of consumption: 983  
1397 PIPELINE 433,  
1398       between: 433 and 433,  
1399       cost of consumption: 240  
1400 PIPELINE 434,  
1401       between: 434 and 434,  
1402       cost of consumption: 637  
1403 PIPELINE 435,

1314        between: 435 and 435,  
1315        cost of consumption: 653  
1316 PIPELINE 436,  
1317        between: 436 and 436,  
1318        cost of consumption: 375  
1319 PIPELINE 437,  
1320        between: 437 and 437,  
1321        cost of consumption: 177  
1322 PIPELINE 438,  
1323        between: 438 and 438,  
1324        cost of consumption: 754  
1325 PIPELINE 439,  
1326        between: 439 and 439,  
1327        cost of consumption: 329  
1328 PIPELINE 440,  
1329        between: 440 and 440,  
1330        cost of consumption: 117  
1331 PIPELINE 441,  
1332        between: 441 and 441,  
1333        cost of consumption: 263  
1334 PIPELINE 442,  
1335        between: 442 and 442,  
1336        cost of consumption: 575  
1337 PIPELINE 443,  
1338        between: 443 and 443,  
1339        cost of consumption: 123  
1340 PIPELINE 444,  
1341        between: 444 and 444,  
1342        cost of consumption: 251  
1343 PIPELINE 445,  
1344        between: 445 and 445,  
1345        cost of consumption: 636  
1346 PIPELINE 446,  
1347        between: 446 and 446,  
1348        cost of consumption: 539  
1349 PIPELINE 447,  
1350        between: 447 and 447,  
1351        cost of consumption: 19  
1352 PIPELINE 448,  
1353        between: 448 and 448,  
1354        cost of consumption: 228  
1355 PIPELINE 449,  
1356        between: 449 and 449,  
1357        cost of consumption: 8  
1358 PIPELINE 450,  
1359        between: 450 and 450,  
1360        cost of consumption: 137  
1361 PIPELINE 451,  
1362        between: 451 and 451,  
1363        cost of consumption: 392  
1364 PIPELINE 452,  
1365        between: 452 and 452,  
1366        cost of consumption: 110  
1367 PIPELINE 453,  
1368        between: 453 and 453,  
1369        cost of consumption: 381  
1370 PIPELINE 454,  
1371        between: 454 and 454,  
1372        cost of consumption: 504  
1373 PIPELINE 455,  
1374        between: 455 and 455,  
1375        cost of consumption: 637  
1376 PIPELINE 456,  
1377        between: 456 and 456,  
1378        cost of consumption: 812  
1379 PIPELINE 457,  
1380        between: 457 and 457,  
1381        cost of consumption: 902  
1382 PIPELINE 458,  
1383        between: 458 and 458,  
1384        cost of consumption: 251  
1385 PIPELINE 459,  
1386        between: 459 and 459,  
1387        cost of consumption: 898  
1388 PIPELINE 460,  
1389        between: 460 and 460,  
1390        cost of consumption: 812  
1391 PIPELINE 461,  
1392        between: 461 and 461,  
1393        cost of consumption: 190  
1394 PIPELINE 462,  
1395        between: 462 and 462,  
1396        cost of consumption: 280  
1397 PIPELINE 463,  
1398        between: 463 and 463,  
1399        cost of consumption: 142  
1400 PIPELINE 464,  
1401        between: 464 and 464,  
1402        cost of consumption: 778  
1403 PIPELINE 465,  
1404        between: 465 and 465,  
1405        cost of consumption: 913  
1406 PIPELINE 466,  
1407        between: 466 and 466,  
1408        cost of consumption: 142  
1409 PIPELINE 467,  
1410        between: 467 and 467,  
1411        cost of consumption: 500  
1412 PIPELINE 468,  
1413        between: 468 and 468,  
1414        cost of consumption: 437  
1415 PIPELINE 469,  
1416        between: 469 and 469,  
1417        cost of consumption: 891  
1418 PIPELINE 470,  
1419        between: 470 and 470,  
1420        cost of consumption: 825  
1421 PIPELINE 471,  
1422        between: 471 and 471,

1423       cost of consumption: 902  
1424 PIPELINE 472,  
1425       between: 472 and 472,  
1426       cost of consumption: 149  
1427 PIPELINE 473,  
1428       between: 473 and 473,  
1429       cost of consumption: 747  
1430 PIPELINE 474,  
1431       between: 474 and 474,  
1432       cost of consumption: 20  
1433 PIPELINE 475,  
1434       between: 475 and 475,  
1435       cost of consumption: 747  
1436 PIPELINE 476,  
1437       between: 476 and 476,  
1438       cost of consumption: 378  
1439 PIPELINE 477,  
1440       between: 477 and 477,  
1441       cost of consumption: 554  
1442 PIPELINE 478,  
1443       between: 478 and 478,  
1444       cost of consumption: 762  
1445 PIPELINE 479,  
1446       between: 479 and 479,  
1447       cost of consumption: 601  
1448 PIPELINE 480,  
1449       between: 480 and 480,  
1450       cost of consumption: 910  
1451 PIPELINE 481,  
1452       between: 481 and 481,  
1453       cost of consumption: 246  
1454 PIPELINE 482,  
1455       between: 482 and 482,  
1456       cost of consumption: 340  
1457 PIPELINE 483,  
1458       between: 483 and 483,  
1459       cost of consumption: 367  
1460 PIPELINE 484,  
1461       between: 484 and 484,  
1462       cost of consumption: 622  
1463 PIPELINE 485,  
1464       between: 485 and 485,  
1465       cost of consumption: 839  
1466 PIPELINE 486,  
1467       between: 486 and 486,  
1468       cost of consumption: 999  
1469 PIPELINE 487,  
1470       between: 487 and 487,  
1471       cost of consumption: 429  
1472 PIPELINE 488,  
1473       between: 488 and 488,  
1474       cost of consumption: 89  
1475 PIPELINE 489,  
1476       between: 489 and 489,  
1477       cost of consumption: 597  
1478 PIPELINE 490,  
1479       between: 490 and 490,  
1480       cost of consumption: 674  
1481 PIPELINE 491,  
1482       between: 491 and 491,  
1483       cost of consumption: 896  
1484 PIPELINE 492,  
1485       between: 492 and 492,  
1486       cost of consumption: 135  
1487 PIPELINE 493,  
1488       between: 493 and 493,  
1489       cost of consumption: 950  
1490 PIPELINE 494,  
1491       between: 494 and 494,  
1492       cost of consumption: 33  
1493 PIPELINE 495,  
1494       between: 495 and 495,  
1495       cost of consumption: 260  
1496 PIPELINE 496,  
1497       between: 496 and 496,  
1498       cost of consumption: 858  
1499 PIPELINE 497,  
1500       between: 497 and 497,  
1501       cost of consumption: 522  
1502 PIPELINE 498,  
1503       between: 498 and 498,  
1504       cost of consumption: 755  
1505 PIPELINE 499,  
1506       between: 499 and 499,  
1507       cost of consumption: 642  
1508 PIPELINE 500,  
1509       between: 500 and 500,  
1510       cost of consumption: 408  
1511 PIPELINE 501,  
1512       between: 501 and 501,  
1513       cost of consumption: 927  
1514 PIPELINE 502,  
1515       between: 502 and 502,  
1516       cost of consumption: 539  
1517 PIPELINE 503,  
1518       between: 503 and 503,  
1519       cost of consumption: 905  
1520 PIPELINE 504,  
1521       between: 504 and 504,  
1522       cost of consumption: 669  
1523 PIPELINE 505,  
1524       between: 505 and 505,  
1525       cost of consumption: 555  
1526 PIPELINE 506,  
1527       between: 506 and 506,  
1528       cost of consumption: 647  
1529 PIPELINE 507,  
1530       between: 507 and 507,  
1531       cost of consumption: 42  
1532 PTPFLTNF 508.

1533        between: 508 and 508,  
1534        cost of consumption: 456  
1535 PIPELINE 509,  
1536        between: 509 and 509,  
1537        cost of consumption: 756  
1538 PIPELINE 510,  
1539        between: 510 and 510,  
1540        cost of consumption: 990  
1541 PIPELINE 511,  
1542        between: 511 and 511,  
1543        cost of consumption: 713  
1544 PIPELINE 512,  
1545        between: 16 and 224,  
1546        cost of consumption: 76  
1547 PIPELINE 513,  
1548        between: 473 and 267,  
1549        cost of consumption: 422  
1550 PIPELINE 514,  
1551        between: 474 and 191,  
1552        cost of consumption: 15  
1553 PIPELINE 515,  
1554        between: 303 and 370,  
1555        cost of consumption: 497  
1556 PIPELINE 516,  
1557        between: 448 and 382,  
1558        cost of consumption: 752  
1559 PIPELINE 517,  
1560        between: 245 and 139,  
1561        cost of consumption: 502  
1562 PIPELINE 518,  
1563        between: 491 and 22,  
1564        cost of consumption: 425  
1565 PIPELINE 519,  
1566        between: 489 and 178,  
1567        cost of consumption: 89  
1568 PIPELINE 520,  
1569        between: 487 and 61,  
1570        cost of consumption: 479  
1571 PIPELINE 521,  
1572        between: 291 and 156,  
1573        cost of consumption: 816  
1574 PIPELINE 522,  
1575        between: 343 and 173,  
1576        cost of consumption: 137  
1577 PIPELINE 523,  
1578        between: 190 and 134,  
1579        cost of consumption: 996  
1580 PIPELINE 524,  
1581        between: 296 and 96,  
1582        cost of consumption: 587  
1583 PIPELINE 525,  
1584        between: 122 and 400,  
1585        cost of consumption: 421  
1586 PIPELINE 526,  
1587        between: 278 and 336,  
1588        cost of consumption: 635  
1589 PIPELINE 527,  
1590        between: 249 and 70,  
1591        cost of consumption: 366  
1592 PIPELINE 528,  
1593        between: 98 and 49,  
1594        cost of consumption: 852  
1595 PIPELINE 529,  
1596        between: 62 and 26,  
1597        cost of consumption: 239  
1598 PIPELINE 530,  
1599        between: 355 and 2,  
1600        cost of consumption: 620  
1601 PIPELINE 531,  
1602        between: 477 and 293,  
1603        cost of consumption: 752  
1604 PIPELINE 532,  
1605        between: 96 and 124,  
1606        cost of consumption: 229  
1607 PIPELINE 533,  
1608        between: 452 and 315,  
1609        cost of consumption: 668  
1610 PIPELINE 534,  
1611        between: 51 and 99,  
1612        cost of consumption: 844  
1613 PIPELINE 535,  
1614        between: 353 and 221,  
1615        cost of consumption: 428  
1616 PIPELINE 536,  
1617        between: 1 and 499,  
1618        cost of consumption: 365  
1619 PIPELINE 537,  
1620        between: 31 and 236,  
1621        cost of consumption: 859  
1622 PIPELINE 538,  
1623        between: 200 and 334,  
1624        cost of consumption: 252  
1625 PIPELINE 539,  
1626        between: 392 and 397,  
1627        cost of consumption: 374  
1628 PIPELINE 540,  
1629        between: 250 and 240,  
1630        cost of consumption: 832  
1631 PIPELINE 541,  
1632        between: 169 and 205,  
1633        cost of consumption: 77  
1634 PIPELINE 542,  
1635        between: 244 and 301,  
1636        cost of consumption: 466  
1637 PIPELINE 543,  
1638        between: 493 and 242,  
1639        cost of consumption: 125  
1640 PIPELINE 544,  
1641        between: 364 and 293,

1642       cost of consumption: 472  
1643 PIPELINE 545,  
1644       between: 331 and 135,  
1645       cost of consumption: 869  
1646 PIPELINE 546,  
1647       between: 187 and 136,  
1648       cost of consumption: 456  
1649 PIPELINE 547,  
1650       between: 379 and 168,  
1651       cost of consumption: 684  
1652 PIPELINE 548,  
1653       between: 129 and 368,  
1654       cost of consumption: 402  
1655 PIPELINE 549,  
1656       between: 440 and 248,  
1657       cost of consumption: 679  
1658 PIPELINE 550,  
1659       between: 265 and 498,  
1660       cost of consumption: 303  
1661 PIPELINE 551,  
1662       between: 93 and 155,  
1663       cost of consumption: 100  
1664 PIPELINE 552,  
1665       between: 213 and 400,  
1666       cost of consumption: 882  
1667 PIPELINE 553,  
1668       between: 458 and 381,  
1669       cost of consumption: 132  
1670 PIPELINE 554,  
1671       between: 506 and 233,  
1672       cost of consumption: 489  
1673 PIPELINE 555,  
1674       between: 141 and 52,  
1675       cost of consumption: 592  
1676 PIPELINE 556,  
1677       between: 509 and 239,  
1678       cost of consumption: 153  
1679 PIPELINE 557,  
1680       between: 352 and 106,  
1681       cost of consumption: 505  
1682 PIPELINE 558,  
1683       between: 431 and 235,  
1684       cost of consumption: 361  
1685 PIPELINE 559,  
1686       between: 333 and 163,  
1687       cost of consumption: 570  
1688 PIPELINE 560,  
1689       between: 119 and 429,  
1690       cost of consumption: 716  
1691 PIPELINE 561,  
1692       between: 146 and 10,  
1693       cost of consumption: 64  
1694 PIPELINE 562,  
1695       between: 377 and 223,  
1696       cost of consumption: 64  
1697 PIPELINE 563,  
1698       between: 398 and 170,  
1699       cost of consumption: 589  
1700 PIPELINE 564,  
1701       between: 149 and 164,  
1702       cost of consumption: 6  
1703 PIPELINE 565,  
1704       between: 194 and 306,  
1705       cost of consumption: 506  
1706 PIPELINE 566,  
1707       between: 373 and 303,  
1708       cost of consumption: 162  
1709 PIPELINE 567,  
1710       between: 177 and 144,  
1711       cost of consumption: 684  
1712 PIPELINE 568,  
1713       between: 149 and 63,  
1714       cost of consumption: 280  
1715 PIPELINE 569,  
1716       between: 490 and 396,  
1717       cost of consumption: 547  
1718 PIPELINE 570,  
1719       between: 55 and 4,  
1720       cost of consumption: 856  
1721 PIPELINE 571,  
1722       between: 118 and 150,  
1723       cost of consumption: 34  
1724 PIPELINE 572,  
1725       between: 337 and 15,  
1726       cost of consumption: 506  
1727 PIPELINE 573,  
1728       between: 444 and 414,  
1729       cost of consumption: 84  
1730 PIPELINE 574,  
1731       between: 420 and 51,  
1732       cost of consumption: 888  
1733 PIPELINE 575,  
1734       between: 117 and 245,  
1735       cost of consumption: 738  
1736 PIPELINE 576,  
1737       between: 379 and 107,  
1738       cost of consumption: 850  
1739 PIPELINE 577,  
1740       between: 368 and 284,  
1741       cost of consumption: 674  
1742 PIPELINE 578,  
1743       between: 463 and 434,  
1744       cost of consumption: 241  
1745 PIPELINE 579,  
1746       between: 282 and 412,  
1747       cost of consumption: 950  
1748 PIPELINE 580,  
1749       between: 265 and 467,  
1750       cost of consumption: 474

1751 PIPELINE 501,  
1752     between: 164 and 73,  
1753     cost of consumption: 816  
1754 PIPELINE 582,  
1755     between: 74 and 411,  
1756     cost of consumption: 367  
1757 PIPELINE 583,  
1758     between: 207 and 343,  
1759     cost of consumption: 413  
1760 PIPELINE 584,  
1761     between: 510 and 252,  
1762     cost of consumption: 25  
1763 PIPELINE 585,  
1764     between: 465 and 369,  
1765     cost of consumption: 94  
1766 PIPELINE 586,  
1767     between: 215 and 236,  
1768     cost of consumption: 153  
1769 PIPELINE 587,  
1770     between: 268 and 92,  
1771     cost of consumption: 758  
1772 PIPELINE 588,  
1773     between: 465 and 44,  
1774     cost of consumption: 704  
1775 PIPELINE 589,  
1776     between: 213 and 326,  
1777     cost of consumption: 700  
1778 PIPELINE 590,  
1779     between: 358 and 79,  
1780     cost of consumption: 15  
1781 PIPELINE 591,  
1782     between: 507 and 244,  
1783     cost of consumption: 8  
1784 PIPELINE 592,  
1785     between: 294 and 318,  
1786     cost of consumption: 91  
1787 PIPELINE 593,  
1788     between: 97 and 13,  
1789     cost of consumption: 323  
1790 PIPELINE 594,  
1791     between: 313 and 11,  
1792     cost of consumption: 287  
1793 PIPELINE 595,  
1794     between: 69 and 476,  
1795     cost of consumption: 336  
1796 PIPELINE 596,  
1797     between: 71 and 179,  
1798     cost of consumption: 325  
1799 PIPELINE 597,  
1800     between: 179 and 447,  
1801     cost of consumption: 409  
1802 PIPELINE 598,  
1803     between: 60 and 400,  
1804     cost of consumption: 917  
1805 PIPELINE 599,  
1806     between: 375 and 102,  
1807     cost of consumption: 532  
1808 PIPELINE 600,  
1809     between: 78 and 460,  
1810     cost of consumption: 91  
1811 PIPELINE 601,  
1812     between: 248 and 456,  
1813     cost of consumption: 799  
1814 PIPELINE 602,  
1815     between: 492 and 238,  
1816     cost of consumption: 685  
1817 PIPELINE 603,  
1818     between: 122 and 335,  
1819     cost of consumption: 954  
1820 PIPELINE 604,  
1821     between: 96 and 137,  
1822     cost of consumption: 685  
1823 PIPELINE 605,  
1824     between: 322 and 206,  
1825     cost of consumption: 762  
1826 PIPELINE 606,  
1827     between: 406 and 277,  
1828     cost of consumption: 269  
1829 PIPELINE 607,  
1830     between: 214 and 457,  
1831     cost of consumption: 701  
1832 PIPELINE 608,  
1833     between: 114 and 5,  
1834     cost of consumption: 781  
1835 PIPELINE 609,  
1836     between: 59 and 381,  
1837     cost of consumption: 43  
1838 PIPELINE 610,  
1839     between: 330 and 459,  
1840     cost of consumption: 488  
1841 PIPELINE 611,  
1842     between: 168 and 196,  
1843     cost of consumption: 880  
1844 PIPELINE 612,  
1845     between: 251 and 176,  
1846     cost of consumption: 734  
1847 PIPELINE 613,  
1848     between: 139 and 298,  
1849     cost of consumption: 414  
1850 PIPELINE 614,  
1851     between: 41 and 395,  
1852     cost of consumption: 327  
1853 PIPELINE 615,  
1854     between: 465 and 205,  
1855     cost of consumption: 197  
1856 PIPELINE 616,  
1857     between: 342 and 99,  
1858     cost of consumption: 763  
1859 PIPELINE 617,  
1860     between: 399 and 313,

1861 cost of consumption: 172  
1862 PIPELINE 618,  
1863 between: 391 and 428,  
1864 cost of consumption: 881  
1865 PIPELINE 619,  
1866 between: 271 and 487,  
1867 cost of consumption: 238  
1868 PIPELINE 620,  
1869 between: 254 and 305,  
1870 cost of consumption: 290  
1871 PIPELINE 621,  
1872 between: 185 and 473,  
1873 cost of consumption: 46  
1874 PIPELINE 622,  
1875 between: 60 and 212,  
1876 cost of consumption: 862  
1877 PIPELINE 623,  
1878 between: 173 and 352,  
1879 cost of consumption: 824  
1880 PIPELINE 624,  
1881 between: 110 and 393,  
1882 cost of consumption: 251  
1883 PIPELINE 625,  
1884 between: 184 and 346,  
1885 cost of consumption: 129  
1886 PIPELINE 626,  
1887 between: 465 and 177,  
1888 cost of consumption: 436  
1889 PIPELINE 627,  
1890 between: 511 and 64,  
1891 cost of consumption: 198  
1892 PIPELINE 628,  
1893 between: 502 and 455,  
1894 cost of consumption: 818  
1895 PIPELINE 629,  
1896 between: 498 and 214,  
1897 cost of consumption: 561  
1898 PIPELINE 630,  
1899 between: 364 and 468,  
1900 cost of consumption: 602  
1901 PIPELINE 631,  
1902 between: 177 and 141,  
1903 cost of consumption: 731  
1904 PIPELINE 632,  
1905 between: 186 and 201,  
1906 cost of consumption: 392  
1907 PIPELINE 633,  
1908 between: 371 and 375,  
1909 cost of consumption: 968  
1910 PIPELINE 634,  
1911 between: 342 and 485,  
1912 cost of consumption: 57  
1913 PIPELINE 635,  
1914 between: 197 and 158,  
1915 cost of consumption: 43  
1916 PIPELINE 636,  
1917 between: 257 and 111,  
1918 cost of consumption: 36  
1919 PIPELINE 637,  
1920 between: 416 and 110,  
1921 cost of consumption: 596  
1922 PIPELINE 638,  
1923 between: 377 and 100,  
1924 cost of consumption: 475  
1925 PIPELINE 639,  
1926 between: 254 and 86,  
1927 cost of consumption: 98  
1928 PIPELINE 640,  
1929 between: 106 and 450,  
1930 cost of consumption: 206  
1931 PIPELINE 641,  
1932 between: 263 and 115,  
1933 cost of consumption: 932  
1934 PIPELINE 642,  
1935 between: 382 and 301,  
1936 cost of consumption: 501  
1937 PIPELINE 643,  
1938 between: 201 and 160,  
1939 cost of consumption: 996  
1940 PIPELINE 644,  
1941 between: 372 and 503,  
1942 cost of consumption: 826  
1943 PIPELINE 645,  
1944 between: 424 and 188,  
1945 cost of consumption: 16  
1946 PIPELINE 646,  
1947 between: 310 and 445,  
1948 cost of consumption: 55  
1949 PIPELINE 647,  
1950 between: 374 and 349,  
1951 cost of consumption: 405  
1952 PIPELINE 648,  
1953 between: 501 and 215,  
1954 cost of consumption: 585  
1955 PIPELINE 649,  
1956 between: 60 and 469,  
1957 cost of consumption: 119  
1958 PIPELINE 650,  
1959 between: 345 and 64,  
1960 cost of consumption: 298  
1961 PIPELINE 651,  
1962 between: 74 and 327,  
1963 cost of consumption: 53  
1964 PIPELINE 652,  
1965 between: 457 and 197,  
1966 cost of consumption: 483  
1967 PIPELINE 653,  
1968 between: 18 and 398,  
1969 cost of consumption: 739  
1970 PIPELINE 654

1970 PIPELINE 654,  
1971       between: 465 and 258,  
1972       cost of consumption: 698  
1973 PIPELINE 655,  
1974       between: 374 and 170,  
1975       cost of consumption: 606  
1976 PIPELINE 656,  
1977       between: 441 and 481,  
1978       cost of consumption: 587  
1979 PIPELINE 657,  
1980       between: 107 and 343,  
1981       cost of consumption: 425  
1982 PIPELINE 658,  
1983       between: 395 and 332,  
1984       cost of consumption: 312  
1985 PIPELINE 659,  
1986       between: 271 and 392,  
1987       cost of consumption: 765  
1988 PIPELINE 660,  
1989       between: 234 and 225,  
1990       cost of consumption: 989  
1991 PIPELINE 661,  
1992       between: 135 and 300,  
1993       cost of consumption: 285  
1994 PIPELINE 662,  
1995       between: 151 and 245,  
1996       cost of consumption: 730  
1997 PIPELINE 663,  
1998       between: 469 and 263,  
1999       cost of consumption: 361  
2000 PIPELINE 664,  
2001       between: 436 and 217,  
2002       cost of consumption: 843  
2003 PIPELINE 665,  
2004       between: 393 and 79,  
2005       cost of consumption: 878  
2006 PIPELINE 666,  
2007       between: 27 and 9,  
2008       cost of consumption: 207  
2009 PIPELINE 667,  
2010       between: 105 and 116,  
2011       cost of consumption: 862  
2012 PIPELINE 668,  
2013       between: 21 and 0,  
2014       cost of consumption: 82  
2015 PIPELINE 669,  
2016       between: 152 and 271,  
2017       cost of consumption: 395  
2018 PIPELINE 670,  
2019       between: 241 and 505,  
2020       cost of consumption: 540  
2021 PIPELINE 671,  
2022       between: 393 and 128,  
2023       cost of consumption: 720  
2024 PIPELINE 672,  
2025       between: 361 and 280,  
2026       cost of consumption: 214  
2027 PIPELINE 673,  
2028       between: 15 and 237,  
2029       cost of consumption: 869  
2030 PIPELINE 674,  
2031       between: 67 and 161,  
2032       cost of consumption: 678  
2033 PIPELINE 675,  
2034       between: 377 and 43,  
2035       cost of consumption: 814  
2036 PIPELINE 676,  
2037       between: 346 and 70,  
2038       cost of consumption: 639  
2039 PIPELINE 677,  
2040       between: 284 and 175,  
2041       cost of consumption: 851  
2042 PIPELINE 678,  
2043       between: 53 and 197,  
2044       cost of consumption: 907  
2045 PIPELINE 679,  
2046       between: 155 and 349,  
2047       cost of consumption: 683  
2048 PIPELINE 680,  
2049       between: 137 and 78,  
2050       cost of consumption: 644  
2051 PIPELINE 681,  
2052       between: 344 and 472,  
2053       cost of consumption: 789  
2054 PIPELINE 682,  
2055       between: 340 and 321,  
2056       cost of consumption: 813  
2057 PIPELINE 683,  
2058       between: 69 and 336,  
2059       cost of consumption: 194  
2060 PIPELINE 684,  
2061       between: 61 and 403,  
2062       cost of consumption: 724  
2063 PIPELINE 685,  
2064       between: 271 and 269,  
2065       cost of consumption: 391  
2066 PIPELINE 686,  
2067       between: 48 and 103,  
2068       cost of consumption: 501  
2069 PIPELINE 687,  
2070       between: 346 and 388,  
2071       cost of consumption: 636  
2072 PIPELINE 688,  
2073       between: 248 and 441,  
2074       cost of consumption: 217  
2075 PIPELINE 689,  
2076       between: 151 and 84,  
2077       cost of consumption: 903  
2078 PIPELINE 690,  
2079       between: 325 and 221.

2080 cost of consumption: 749  
2081 PIPELINE 691,  
2082 between: 492 and 54,  
2083 cost of consumption: 149  
2084 PIPELINE 692,  
2085 between: 276 and 394,  
2086 cost of consumption: 679  
2087 PIPELINE 693,  
2088 between: 340 and 463,  
2089 cost of consumption: 63  
2090 PIPELINE 694,  
2091 between: 130 and 12,  
2092 cost of consumption: 715  
2093 PIPELINE 695,  
2094 between: 81 and 283,  
2095 cost of consumption: 768  
2096 PIPELINE 696,  
2097 between: 75 and 331,  
2098 cost of consumption: 799  
2099 PIPELINE 697,  
2100 between: 139 and 165,  
2101 cost of consumption: 11  
2102 PIPELINE 698,  
2103 between: 378 and 414,  
2104 cost of consumption: 261  
2105 PIPELINE 699,  
2106 between: 303 and 53,  
2107 cost of consumption: 977  
2108 PIPELINE 700,  
2109 between: 65 and 378,  
2110 cost of consumption: 903  
2111 PIPELINE 701,  
2112 between: 417 and 358,  
2113 cost of consumption: 573  
2114 PIPELINE 702,  
2115 between: 218 and 123,  
2116 cost of consumption: 703  
2117 PIPELINE 703,  
2118 between: 340 and 463,  
2119 cost of consumption: 854  
2120 PIPELINE 704,  
2121 between: 286 and 81,  
2122 cost of consumption: 242  
2123 PIPELINE 705,  
2124 between: 124 and 162,  
2125 cost of consumption: 190  
2126 PIPELINE 706,  
2127 between: 231 and 237,  
2128 cost of consumption: 857  
2129 PIPELINE 707,  
2130 between: 442 and 376,  
2131 cost of consumption: 231  
2132 PIPELINE 708,  
2133 between: 16 and 243,  
2134 cost of consumption: 157  
2135 PIPELINE 709,  
2136 between: 32 and 34,  
2137 cost of consumption: 538  
2138 PIPELINE 710,  
2139 between: 133 and 99,  
2140 cost of consumption: 404  
2141 PIPELINE 711,  
2142 between: 455 and 4,  
2143 cost of consumption: 394  
2144 PIPELINE 712,  
2145 between: 319 and 222,  
2146 cost of consumption: 645  
2147 PIPELINE 713,  
2148 between: 65 and 50,  
2149 cost of consumption: 317  
2150 PIPELINE 714,  
2151 between: 274 and 337,  
2152 cost of consumption: 598  
2153 PIPELINE 715,  
2154 between: 495 and 461,  
2155 cost of consumption: 561  
2156 PIPELINE 716,  
2157 between: 488 and 181,  
2158 cost of consumption: 590  
2159 PIPELINE 717,  
2160 between: 301 and 111,  
2161 cost of consumption: 535  
2162 PIPELINE 718,  
2163 between: 279 and 127,  
2164 cost of consumption: 730  
2165 PIPELINE 719,  
2166 between: 159 and 160,  
2167 cost of consumption: 388  
2168 PIPELINE 720,  
2169 between: 92 and 293,  
2170 cost of consumption: 759  
2171 PIPELINE 721,  
2172 between: 403 and 236,  
2173 cost of consumption: 235  
2174 PIPELINE 722,  
2175 between: 48 and 43,  
2176 cost of consumption: 666  
2177 PIPELINE 723,  
2178 between: 329 and 108,  
2179 cost of consumption: 724  
2180 PIPELINE 724,  
2181 between: 49 and 382,  
2182 cost of consumption: 469  
2183 PIPELINE 725,  
2184 between: 362 and 365,  
2185 cost of consumption: 963  
2186 PIPELINE 726,  
2187 between: 326 and 342,  
2188 cost of consumption: 968  
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2189 PIPELINE 727,  
2190     between: 16 and 131,  
2191     cost of consumption: 631  
2192 PIPELINE 728,  
2193     between: 82 and 410,  
2194     cost of consumption: 606  
2195 PIPELINE 729,  
2196     between: 391 and 57,  
2197     cost of consumption: 502  
2198 PIPELINE 730,  
2199     between: 222 and 149,  
2200     cost of consumption: 291  
2201 PIPELINE 731,  
2202     between: 152 and 40,  
2203     cost of consumption: 927  
2204 PIPELINE 732,  
2205     between: 86 and 88,  
2206     cost of consumption: 274  
2207 PIPELINE 733,  
2208     between: 243 and 417,  
2209     cost of consumption: 734  
2210 PIPELINE 734,  
2211     between: 451 and 466,  
2212     cost of consumption: 860  
2213 PIPELINE 735,  
2214     between: 483 and 317,  
2215     cost of consumption: 890  
2216 PIPELINE 736,  
2217     between: 465 and 131,  
2218     cost of consumption: 656  
2219 PIPELINE 737,  
2220     between: 116 and 147,  
2221     cost of consumption: 715  
2222 PIPELINE 738,  
2223     between: 390 and 229,  
2224     cost of consumption: 293  
2225 PIPELINE 739,  
2226     between: 280 and 108,  
2227     cost of consumption: 542  
2228 PIPELINE 740,  
2229     between: 329 and 330,  
2230     cost of consumption: 347  
2231 PIPELINE 741,  
2232     between: 160 and 482,  
2233     cost of consumption: 107  
2234 PIPELINE 742,  
2235     between: 226 and 57,  
2236     cost of consumption: 211  
2237 PIPELINE 743,  
2238     between: 336 and 300,  
2239     cost of consumption: 5  
2240 PIPELINE 744,  
2241     between: 41 and 239,  
2242     cost of consumption: 799  
2243 PIPELINE 745,  
2244     between: 129 and 211,  
2245     cost of consumption: 188  
2246 PIPELINE 746,  
2247     between: 70 and 164,  
2248     cost of consumption: 432  
2249 PIPELINE 747,  
2250     between: 353 and 281,  
2251     cost of consumption: 763  
2252 PIPELINE 748,  
2253     between: 255 and 159,  
2254     cost of consumption: 417  
2255 PIPELINE 749,  
2256     between: 55 and 439,  
2257     cost of consumption: 765  
2258 PIPELINE 750,  
2259     between: 424 and 257,  
2260     cost of consumption: 544  
2261 PIPELINE 751,  
2262     between: 430 and 417,  
2263     cost of consumption: 858  
2264 PIPELINE 752,  
2265     between: 476 and 131,  
2266     cost of consumption: 939  
2267 PIPELINE 753,  
2268     between: 98 and 467,  
2269     cost of consumption: 152  
2270 PIPELINE 754,  
2271     between: 138 and 509,  
2272     cost of consumption: 863  
2273 PIPELINE 755,  
2274     between: 133 and 126,  
2275     cost of consumption: 890  
2276 PIPELINE 756,  
2277     between: 444 and 196,  
2278     cost of consumption: 543  
2279 PIPELINE 757,  
2280     between: 375 and 37,  
2281     cost of consumption: 432  
2282 PIPELINE 758,  
2283     between: 454 and 292,  
2284     cost of consumption: 535  
2285 PIPELINE 759,  
2286     between: 250 and 347,  
2287     cost of consumption: 807  
2288 PIPELINE 760,  
2289     between: 154 and 259,  
2290     cost of consumption: 40  
2291 PIPELINE 761,  
2292     between: 389 and 177,  
2293     cost of consumption: 577  
2294 PIPELINE 762,  
2295     between: 83 and 141,  
2296     cost of consumption: 988  
2297 PIPELINE 763,  
2298     between: 345 and 239

2299        between: 315 and 259,  
2300        cost of consumption: 544  
2301        PIPELINE 764,  
2302            between: 396 and 378,  
2303            cost of consumption: 677  
2304        PIPELINE 765,  
2305            between: 175 and 511,  
2306            cost of consumption: 595  
2307        PIPELINE 766,  
2308            between: 164 and 443,  
2309            cost of consumption: 479  
2310        PIPELINE 767,  
2311            between: 318 and 307,  
2312            cost of consumption: 684  
2313        PIPELINE 768,  
2314            between: 241 and 249,  
2315            cost of consumption: 920  
2316        PIPELINE 769,  
2317            between: 324 and 499,  
2318            cost of consumption: 123  
2319        PIPELINE 770,  
2320            between: 334 and 141,  
2321            cost of consumption: 534  
2322        PIPELINE 771,  
2323            between: 89 and 19,  
2324            cost of consumption: 791  
2325        PIPELINE 772,  
2326            between: 261 and 102,  
2327            cost of consumption: 700  
2328        PIPELINE 773,  
2329            between: 52 and 447,  
2330            cost of consumption: 115  
2331        PIPELINE 774,  
2332            between: 311 and 332,  
2333            cost of consumption: 37  
2334        PIPELINE 775,  
2335            between: 55 and 507,  
2336            cost of consumption: 964  
2337        PIPELINE 776,  
2338            between: 437 and 159,  
2339            cost of consumption: 728  
2340        PIPELINE 777,  
2341            between: 503 and 478,  
2342            cost of consumption: 755  
2343        PIPELINE 778,  
2344            between: 94 and 207,  
2345            cost of consumption: 860  
2346        PIPELINE 779,  
2347            between: 489 and 19,  
2348            cost of consumption: 103  
2349        PIPELINE 780,  
2350            between: 207 and 353,  
2351            cost of consumption: 244  
2352        PIPELINE 781,  
2353            between: 184 and 442,  
2354            cost of consumption: 175  
2355        PIPELINE 782,  
2356            between: 338 and 191,  
2357            cost of consumption: 453  
2358        PIPELINE 783,  
2359            between: 121 and 244,  
2360            cost of consumption: 661  
2361        PIPELINE 784,  
2362            between: 144 and 43,  
2363            cost of consumption: 649  
2364        PIPELINE 785,  
2365            between: 32 and 99,  
2366            cost of consumption: 276  
2367        PIPELINE 786,  
2368            between: 432 and 24,  
2369            cost of consumption: 427  
2370        PIPELINE 787,  
2371            between: 251 and 16,  
2372            cost of consumption: 993  
2373        PIPELINE 788,  
2374            between: 377 and 110,  
2375            cost of consumption: 49  
2376        PIPELINE 789,  
2377            between: 240 and 88,  
2378            cost of consumption: 180  
2379        PIPELINE 790,  
2380            between: 90 and 295,  
2381            cost of consumption: 486  
2382        PIPELINE 791,  
2383            between: 81 and 480,  
2384            cost of consumption: 704  
2385        PIPELINE 792,  
2386            between: 92 and 306,  
2387            cost of consumption: 760  
2388        PIPELINE 793,  
2389            between: 204 and 428,  
2390            cost of consumption: 284  
2391        PIPELINE 794,  
2392            between: 252 and 60,  
2393            cost of consumption: 519  
2394        PIPELINE 795,  
2395            between: 120 and 92,  
2396            cost of consumption: 786  
2397        PIPELINE 796,  
2398            between: 495 and 12,  
2399            cost of consumption: 379  
2400        PIPELINE 797,  
2401            between: 6 and 263,  
2402            cost of consumption: 771  
2403        PIPELINE 798,  
2404            between: 506 and 128,  
2405            cost of consumption: 993  
2406        PIPELINE 799,  
2407            between: 190 and 368,  
                cost of consumption: 961

2408 PIPELINE 800,  
2409     between: 406 and 458,  
2410     cost of consumption: 497  
2411 PIPELINE 801,  
2412     between: 463 and 28,  
2413     cost of consumption: 777  
2414 PIPELINE 802,  
2415     between: 450 and 120,  
2416     cost of consumption: 291  
2417 PIPELINE 803,  
2418     between: 117 and 324,  
2419     cost of consumption: 735  
2420 PIPELINE 804,  
2421     between: 28 and 65,  
2422     cost of consumption: 867  
2423 PIPELINE 805,  
2424     between: 495 and 185,  
2425     cost of consumption: 424  
2426 PIPELINE 806,  
2427     between: 36 and 169,  
2428     cost of consumption: 12  
2429 PIPELINE 807,  
2430     between: 114 and 175,  
2431     cost of consumption: 60  
2432 PIPELINE 808,  
2433     between: 208 and 169,  
2434     cost of consumption: 316  
2435 PIPELINE 809,  
2436     between: 413 and 360,  
2437     cost of consumption: 637  
2438 PIPELINE 810,  
2439     between: 193 and 254,  
2440     cost of consumption: 119  
2441 PIPELINE 811,  
2442     between: 269 and 205,  
2443     cost of consumption: 355  
2444 PIPELINE 812,  
2445     between: 313 and 143,  
2446     cost of consumption: 867  
2447 PIPELINE 813,  
2448     between: 152 and 261,  
2449     cost of consumption: 752  
2450 PIPELINE 814,  
2451     between: 418 and 289,  
2452     cost of consumption: 17  
2453 PIPELINE 815,  
2454     between: 233 and 272,  
2455     cost of consumption: 306  
2456 PIPELINE 816,  
2457     between: 140 and 309,  
2458     cost of consumption: 595  
2459 PIPELINE 817,  
2460     between: 59 and 423,  
2461     cost of consumption: 954  
2462 PIPELINE 818,  
2463     between: 242 and 120,  
2464     cost of consumption: 76  
2465 PIPELINE 819,  
2466     between: 42 and 21,  
2467     cost of consumption: 652  
2468 PIPELINE 820,  
2469     between: 210 and 214,  
2470     cost of consumption: 562  
2471 PIPELINE 821,  
2472     between: 324 and 484,  
2473     cost of consumption: 583  
2474 PIPELINE 822,  
2475     between: 467 and 285,  
2476     cost of consumption: 470  
2477 PIPELINE 823,  
2478     between: 217 and 437,  
2479     cost of consumption: 331  
2480 PIPELINE 824,  
2481     between: 292 and 344,  
2482     cost of consumption: 741  
2483 PIPELINE 825,  
2484     between: 432 and 65,  
2485     cost of consumption: 917  
2486 PIPELINE 826,  
2487     between: 246 and 205,  
2488     cost of consumption: 994  
2489 PIPELINE 827,  
2490     between: 228 and 264,  
2491     cost of consumption: 994  
2492 PIPELINE 828,  
2493     between: 386 and 507,  
2494     cost of consumption: 34  
2495 PIPELINE 829,  
2496     between: 201 and 37,  
2497     cost of consumption: 455  
2498 PIPELINE 830,  
2499     between: 376 and 247,  
2500     cost of consumption: 861  
2501 PIPELINE 831,  
2502     between: 293 and 59,  
2503     cost of consumption: 449  
2504 PIPELINE 832,  
2505     between: 415 and 14,  
2506     cost of consumption: 287  
2507 PIPELINE 833,  
2508     between: 168 and 232,  
2509     cost of consumption: 716  
2510 PIPELINE 834,  
2511     between: 183 and 12,  
2512     cost of consumption: 116  
2513 PIPELINE 835,  
2514     between: 487 and 445,  
2515     cost of consumption: 701  
2516 PIPELINE 836,  
2517     between: 39 and 170

2517        between: 39 and 179,  
2518        cost of consumption: 538  
2519        PIPELINE 837,  
2520             between: 413 and 407,  
2521             cost of consumption: 987  
2522        PIPELINE 838,  
2523             between: 186 and 281,  
2524             cost of consumption: 454  
2525        PIPELINE 839,  
2526             between: 79 and 482,  
2527             cost of consumption: 251  
2528        PIPELINE 840,  
2529             between: 505 and 346,  
2530             cost of consumption: 10  
2531        PIPELINE 841,  
2532             between: 121 and 127,  
2533             cost of consumption: 197  
2534        PIPELINE 842,  
2535             between: 222 and 30,  
2536             cost of consumption: 516  
2537        PIPELINE 843,  
2538             between: 96 and 199,  
2539             cost of consumption: 476  
2540        PIPELINE 844,  
2541             between: 407 and 382,  
2542             cost of consumption: 528  
2543        PIPELINE 845,  
2544             between: 39 and 357,  
2545             cost of consumption: 333  
2546        PIPELINE 846,  
2547             between: 247 and 396,  
2548             cost of consumption: 896  
2549        PIPELINE 847,  
2550             between: 149 and 297,  
2551             cost of consumption: 456  
2552        PIPELINE 848,  
2553             between: 315 and 483,  
2554             cost of consumption: 665  
2555        PIPELINE 849,  
2556             between: 476 and 50,  
2557             cost of consumption: 948  
2558        PIPELINE 850,  
2559             between: 162 and 43,  
2560             cost of consumption: 598  
2561        PIPELINE 851,  
2562             between: 95 and 165,  
2563             cost of consumption: 878  
2564        PIPELINE 852,  
2565             between: 87 and 387,  
2566             cost of consumption: 364  
2567        PIPELINE 853,  
2568             between: 94 and 483,  
2569             cost of consumption: 523  
2570        PIPELINE 854,  
2571             between: 333 and 378,  
2572             cost of consumption: 385  
2573        PIPELINE 855,  
2574             between: 73 and 417,  
2575             cost of consumption: 686  
2576        PIPELINE 856,  
2577             between: 257 and 153,  
2578             cost of consumption: 339  
2579        PIPELINE 857,  
2580             between: 109 and 302,  
2581             cost of consumption: 684  
2582        PIPELINE 858,  
2583             between: 368 and 105,  
2584             cost of consumption: 64  
2585        PIPELINE 859,  
2586             between: 396 and 69,  
2587             cost of consumption: 858  
2588        PIPELINE 860,  
2589             between: 395 and 231,  
2590             cost of consumption: 870  
2591        PIPELINE 861,  
2592             between: 229 and 326,  
2593             cost of consumption: 603  
2594        PIPELINE 862,  
2595             between: 190 and 413,  
2596             cost of consumption: 854  
2597        PIPELINE 863,  
2598             between: 181 and 508,  
2599             cost of consumption: 609  
2600        PIPELINE 864,  
2601             between: 372 and 329,  
2602             cost of consumption: 579  
2603        PIPELINE 865,  
2604             between: 432 and 402,  
2605             cost of consumption: 877  
2606        PIPELINE 866,  
2607             between: 338 and 148,  
2608             cost of consumption: 550  
2609        PIPELINE 867,  
2610             between: 128 and 257,  
2611             cost of consumption: 132  
2612        PIPELINE 868,  
2613             between: 215 and 113,  
2614             cost of consumption: 605  
2615        PIPELINE 869,  
2616             between: 274 and 509,  
2617             cost of consumption: 770  
2618        PIPELINE 870,  
2619             between: 384 and 393,  
2620             cost of consumption: 521  
2621        PIPELINE 871,  
2622             between: 25 and 110,  
2623             cost of consumption: 919  
2624        PIPELINE 872,  
2625             between: 343 and 300,  
2626             cost of consumption: 156

2627 PIPELINE 873,  
2628     between: 24 and 481,  
2629     cost of consumption: 392  
2630 PIPELINE 874,  
2631     between: 188 and 341,  
2632     cost of consumption: 802  
2633 PIPELINE 875,  
2634     between: 218 and 262,  
2635     cost of consumption: 556  
2636 PIPELINE 876,  
2637     between: 154 and 88,  
2638     cost of consumption: 336  
2639 PIPELINE 877,  
2640     between: 243 and 216,  
2641     cost of consumption: 33  
2642 PIPELINE 878,  
2643     between: 122 and 431,  
2644     cost of consumption: 802  
2645 PIPELINE 879,  
2646     between: 106 and 194,  
2647     cost of consumption: 952  
2648 PIPELINE 880,  
2649     between: 159 and 66,  
2650     cost of consumption: 481  
2651 PIPELINE 881,  
2652     between: 443 and 91,  
2653     cost of consumption: 279  
2654 PIPELINE 882,  
2655     between: 29 and 434,  
2656     cost of consumption: 923  
2657 PIPELINE 883,  
2658     between: 29 and 458,  
2659     cost of consumption: 124  
2660 PIPELINE 884,  
2661     between: 24 and 134,  
2662     cost of consumption: 50  
2663 PIPELINE 885,  
2664     between: 349 and 352,  
2665     cost of consumption: 784  
2666 PIPELINE 886,  
2667     between: 53 and 507,  
2668     cost of consumption: 656  
2669 PIPELINE 887,  
2670     between: 416 and 238,  
2671     cost of consumption: 704  
2672 PIPELINE 888,  
2673     between: 13 and 361,  
2674     cost of consumption: 903  
2675 PIPELINE 889,  
2676     between: 234 and 467,  
2677     cost of consumption: 17  
2678 PIPELINE 890,  
2679     between: 453 and 115,  
2680     cost of consumption: 603  
2681 PIPELINE 891,  
2682     between: 41 and 46,  
2683     cost of consumption: 822  
2684 PIPELINE 892,  
2685     between: 251 and 76,  
2686     cost of consumption: 976  
2687 PIPELINE 893,  
2688     between: 249 and 105,  
2689     cost of consumption: 914  
2690 PIPELINE 894,  
2691     between: 217 and 129,  
2692     cost of consumption: 240  
2693 PIPELINE 895,  
2694     between: 14 and 479,  
2695     cost of consumption: 233  
2696 PIPELINE 896,  
2697     between: 73 and 20,  
2698     cost of consumption: 764  
2699 PIPELINE 897,  
2700     between: 220 and 436,  
2701     cost of consumption: 378  
2702 PIPELINE 898,  
2703     between: 71 and 449,  
2704     cost of consumption: 203  
2705 PIPELINE 899,  
2706     between: 353 and 172,  
2707     cost of consumption: 191  
2708 PIPELINE 900,  
2709     between: 318 and 113,  
2710     cost of consumption: 106  
2711 PIPELINE 901,  
2712     between: 348 and 155,  
2713     cost of consumption: 816  
2714 PIPELINE 902,  
2715     between: 470 and 406,  
2716     cost of consumption: 588  
2717 PIPELINE 903,  
2718     between: 1 and 144,  
2719     cost of consumption: 573  
2720 PIPELINE 904,  
2721     between: 503 and 361,  
2722     cost of consumption: 863  
2723 PIPELINE 905,  
2724     between: 114 and 375,  
2725     cost of consumption: 902  
2726 PIPELINE 906,  
2727     between: 78 and 448,  
2728     cost of consumption: 594  
2729 PIPELINE 907,  
2730     between: 37 and 156,  
2731     cost of consumption: 270  
2732 PIPELINE 908,  
2733     between: 235 and 227,  
2734     cost of consumption: 312  
2735 PIPELINE 909,

2736        between: 281 and 68,  
2737        cost of consumption: 516  
2738 PIPELINE 910,  
2739        between: 283 and 386,  
2740        cost of consumption: 829  
2741 PIPELINE 911,  
2742        between: 400 and 223,  
2743        cost of consumption: 432  
2744 PIPELINE 912,  
2745        between: 52 and 181,  
2746        cost of consumption: 895  
2747 PIPELINE 913,  
2748        between: 291 and 182,  
2749        cost of consumption: 191  
2750 PIPELINE 914,  
2751        between: 124 and 173,  
2752        cost of consumption: 440  
2753 PIPELINE 915,  
2754        between: 86 and 288,  
2755        cost of consumption: 687  
2756 PIPELINE 916,  
2757        between: 15 and 366,  
2758        cost of consumption: 711  
2759 PIPELINE 917,  
2760        between: 476 and 404,  
2761        cost of consumption: 867  
2762 PIPELINE 918,  
2763        between: 349 and 127,  
2764        cost of consumption: 502  
2765 PIPELINE 919,  
2766        between: 160 and 408,  
2767        cost of consumption: 866  
2768 PIPELINE 920,  
2769        between: 143 and 180,  
2770        cost of consumption: 325  
2771 PIPELINE 921,  
2772        between: 240 and 68,  
2773        cost of consumption: 828  
2774 PIPELINE 922,  
2775        between: 491 and 120,  
2776        cost of consumption: 193  
2777 PIPELINE 923,  
2778        between: 125 and 412,  
2779        cost of consumption: 39  
2780 PIPELINE 924,  
2781        between: 415 and 24,  
2782        cost of consumption: 981  
2783 PIPELINE 925,  
2784        between: 42 and 110,  
2785        cost of consumption: 605  
2786 PIPELINE 926,  
2787        between: 44 and 125,  
2788        cost of consumption: 139  
2789 PIPELINE 927,  
2790        between: 494 and 89,  
2791        cost of consumption: 343  
2792 PIPELINE 928,  
2793        between: 76 and 438,  
2794        cost of consumption: 942  
2795 PIPELINE 929,  
2796        between: 397 and 87,  
2797        cost of consumption: 135  
2798 PIPELINE 930,  
2799        between: 275 and 230,  
2800        cost of consumption: 107  
2801 PIPELINE 931,  
2802        between: 27 and 470,  
2803        cost of consumption: 311  
2804 PIPELINE 932,  
2805        between: 2 and 450,  
2806        cost of consumption: 912  
2807 PIPELINE 933,  
2808        between: 158 and 63,  
2809        cost of consumption: 844  
2810 PIPELINE 934,  
2811        between: 496 and 479,  
2812        cost of consumption: 676  
2813 PIPELINE 935,  
2814        between: 496 and 9,  
2815        cost of consumption: 266  
2816 PIPELINE 936,  
2817        between: 272 and 54,  
2818        cost of consumption: 215  
2819 PIPELINE 937,  
2820        between: 415 and 36,  
2821        cost of consumption: 408  
2822 PIPELINE 938,  
2823        between: 449 and 113,  
2824        cost of consumption: 814  
2825 PIPELINE 939,  
2826        between: 99 and 510,  
2827        cost of consumption: 389  
2828 PIPELINE 940,  
2829        between: 157 and 273,  
2830        cost of consumption: 996  
2831 PIPELINE 941,  
2832        between: 395 and 300,  
2833        cost of consumption: 106  
2834 PIPELINE 942,  
2835        between: 189 and 302,  
2836        cost of consumption: 204  
2837 PIPELINE 943,  
2838        between: 104 and 460,  
2839        cost of consumption: 476  
2840 PIPELINE 944,  
2841        between: 431 and 445,  
2842        cost of consumption: 163  
2843 PIPELINE 945,  
2844        between: 270 and 429,  
2845        cost of consumption: 348

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2846 PIPELINE 946,  
2847     between: 219 and 190,  
2848     cost of consumption: 66  
2849 PIPELINE 947,  
2850     between: 293 and 93,  
2851     cost of consumption: 23  
2852 PIPELINE 948,  
2853     between: 456 and 30,  
2854     cost of consumption: 80  
2855 PIPELINE 949,  
2856     between: 34 and 129,  
2857     cost of consumption: 734  
2858 PIPELINE 950,  
2859     between: 210 and 286,  
2860     cost of consumption: 552  
2861 PIPELINE 951,  
2862     between: 105 and 169,  
2863     cost of consumption: 852  
2864 PIPELINE 952,  
2865     between: 471 and 359,  
2866     cost of consumption: 811  
2867 PIPELINE 953,  
2868     between: 262 and 463,  
2869     cost of consumption: 263  
2870 PIPELINE 954,  
2871     between: 117 and 383,  
2872     cost of consumption: 948  
2873 PIPELINE 955,  
2874     between: 451 and 141,  
2875     cost of consumption: 842  
2876 PIPELINE 956,  
2877     between: 283 and 361,  
2878     cost of consumption: 248  
2879 PIPELINE 957,  
2880     between: 168 and 142,  
2881     cost of consumption: 949  
2882 PIPELINE 958,  
2883     between: 90 and 87,  
2884     cost of consumption: 283  
2885 PIPELINE 959,  
2886     between: 125 and 121,  
2887     cost of consumption: 541  
2888 PIPELINE 960,  
2889     between: 159 and 331,  
2890     cost of consumption: 203  
2891 PIPELINE 961,  
2892     between: 466 and 437,  
2893     cost of consumption: 21  
2894 PIPELINE 962,  
2895     between: 49 and 396,  
2896     cost of consumption: 652  
2897 PIPELINE 963,  
2898     between: 447 and 146,  
2899     cost of consumption: 355  
2900 PIPELINE 964,  
2901     between: 282 and 264,  
2902     cost of consumption: 322  
2903 PIPELINE 965,  
2904     between: 49 and 203,  
2905     cost of consumption: 520  
2906 PIPELINE 966,  
2907     between: 246 and 486,  
2908     cost of consumption: 913  
2909 PIPELINE 967,  
2910     between: 121 and 143,  
2911     cost of consumption: 63  
2912 PIPELINE 968,  
2913     between: 89 and 233,  
2914     cost of consumption: 22  
2915 PIPELINE 969,  
2916     between: 88 and 359,  
2917     cost of consumption: 303  
2918 PIPELINE 970,  
2919     between: 216 and 6,  
2920     cost of consumption: 291  
2921 PIPELINE 971,  
2922     between: 118 and 472,  
2923     cost of consumption: 328  
2924 PIPELINE 972,  
2925     between: 190 and 9,  
2926     cost of consumption: 164  
2927 PIPELINE 973,  
2928     between: 109 and 457,  
2929     cost of consumption: 702  
2930 PIPELINE 974,  
2931     between: 492 and 227,  
2932     cost of consumption: 414  
2933 PIPELINE 975,  
2934     between: 233 and 276,  
2935     cost of consumption: 458  
2936 PIPELINE 976,  
2937     between: 116 and 11,  
2938     cost of consumption: 176  
2939 PIPELINE 977,  
2940     between: 360 and 132,  
2941     cost of consumption: 983  
2942 PIPELINE 978,  
2943     between: 235 and 222,  
2944     cost of consumption: 897  
2945 PIPELINE 979,  
2946     between: 196 and 310,  
2947     cost of consumption: 344  
2948 PIPELINE 980,  
2949     between: 279 and 14,  
2950     cost of consumption: 54  
2951 PIPELINE 981,  
2952     between: 181 and 132,  
2953     cost of consumption: 926  
2954 PIPELINE 982,

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2955     between: 8 and 323,  
2956     cost of consumption: 159  
2957 PIPELINE 983,  
2958     between: 231 and 432,  
2959     cost of consumption: 208  
2960 PIPELINE 984,  
2961     between: 88 and 412,  
2962     cost of consumption: 683  
2963 PIPELINE 985,  
2964     between: 210 and 134,  
2965     cost of consumption: 880  
2966 PIPELINE 986,  
2967     between: 23 and 250,  
2968     cost of consumption: 283  
2969 PIPELINE 987,  
2970     between: 322 and 99,  
2971     cost of consumption: 487  
2972 PIPELINE 988,  
2973     between: 253 and 334,  
2974     cost of consumption: 437  
2975 PIPELINE 989,  
2976     between: 417 and 18,  
2977     cost of consumption: 411  
2978 PIPELINE 990,  
2979     between: 428 and 297,  
2980     cost of consumption: 649  
2981 PIPELINE 991,  
2982     between: 445 and 478,  
2983     cost of consumption: 998  
2984 PIPELINE 992,  
2985     between: 422 and 486,  
2986     cost of consumption: 121  
2987 PIPELINE 993,  
2988     between: 408 and 205,  
2989     cost of consumption: 369  
2990 PIPELINE 994,  
2991     between: 340 and 294,  
2992     cost of consumption: 446  
2993 PIPELINE 995,  
2994     between: 498 and 504,  
2995     cost of consumption: 316  
2996 PIPELINE 996,  
2997     between: 421 and 15,  
2998     cost of consumption: 494  
2999 PIPELINE 997,  
3000     between: 355 and 337.
```

testcase10.txt

```
1 ----- CASE 10 -----
2
3 CASE 10
4 -----
5
6 Given Pipelines:
7 {
8   PIPELINE 0,
9     between: 0 and 0,
10    cost of consumption: 847
11  PIPELINE 1,
12    between: 1 and 1,
13    cost of consumption: 580
14  PIPELINE 2,
15    between: 2 and 2,
16    cost of consumption: 485
17  PIPELINE 3,
18    between: 3 and 3,
19    cost of consumption: 730
20  PIPELINE 4,
21    between: 4 and 4,
22    cost of consumption: 858
23  PIPELINE 5,
24    between: 5 and 5,
25    cost of consumption: 453
26  PIPELINE 6,
27    between: 6 and 6,
28    cost of consumption: 574
29  PIPELINE 7,
30    between: 7 and 7,
31    cost of consumption: 697
32  PIPELINE 8,
33    between: 8 and 8,
34    cost of consumption: 996
35  PIPELINE 9,
36    between: 9 and 9,
37    cost of consumption: 973
38  PIPELINE 10,
39    between: 10 and 10,
40    cost of consumption: 897
41  PIPELINE 11,
42    between: 11 and 11,
43    cost of consumption: 761
44  PIPELINE 12,
45    between: 12 and 12,
46    cost of consumption: 797
47  PIPELINE 13,
48    between: 13 and 13,
49    cost of consumption: 466
50  PIPELINE 14,
51    between: 14 and 14,
52    cost of consumption: 689
53  PIPELINE 15,
54    between: 15 and 15,
55    cost of consumption: 981
56  PIPELINE 16,
57    between: 16 and 16,
58    cost of consumption: 45
59  PIPELINE 17,
60    between: 17 and 17,
61    cost of consumption: 886
62  PIPELINE 18,
63    between: 18 and 18,
64    cost of consumption: 750
65  PIPELINE 19,
66    between: 19 and 19,
67    cost of consumption: 679
68  PIPELINE 20,
69    between: 20 and 20,
70    cost of consumption: 63
71  PIPELINE 21,
72    between: 21 and 21,
73    cost of consumption: 889
74  PIPELINE 22,
75    between: 22 and 22,
76    cost of consumption: 52
77  PIPELINE 23,
78    between: 23 and 23,
79    cost of consumption: 860
80  PIPELINE 24,
81    between: 24 and 24,
82    cost of consumption: 389
83  PIPELINE 25,
84    between: 25 and 25,
85    cost of consumption: 319
86  PIPELINE 26,
87    between: 26 and 26,
88    cost of consumption: 215
89  PIPELINE 27,
90    between: 27 and 27,
91    cost of consumption: 126
92  PIPELINE 28,
93    between: 28 and 28,
94    cost of consumption: 259
95  PIPELINE 29,
96    between: 29 and 29,
97    cost of consumption: 900
98  PIPELINE 30,
99    between: 30 and 30,
100   cost of consumption: 209
101  PIPELINE 31,
102    between: 31 and 31,
103    cost of consumption: 101
104  PIPELINE 32,
105    between: 32 and 32,
106    cost of consumption: 827
107  PIPELINE 33,
108    between: 33 and 33,
109    cost of consumption: 42
110  PIPELINE 34
```

110 PIPELINE 34,  
111     between: 34 and 34,  
112     cost of consumption: 179  
113 PIPELINE 35,  
114     between: 35 and 35,  
115     cost of consumption: 32  
116 PIPELINE 36,  
117     between: 36 and 36,  
118     cost of consumption: 842  
119 PIPELINE 37,  
120     between: 37 and 37,  
121     cost of consumption: 748  
122 PIPELINE 38,  
123     between: 38 and 38,  
124     cost of consumption: 724  
125 PIPELINE 39,  
126     between: 39 and 39,  
127     cost of consumption: 185  
128 PIPELINE 40,  
129     between: 40 and 40,  
130     cost of consumption: 716  
131 PIPELINE 41,  
132     between: 41 and 41,  
133     cost of consumption: 617  
134 PIPELINE 42,  
135     between: 42 and 42,  
136     cost of consumption: 941  
137 PIPELINE 43,  
138     between: 43 and 43,  
139     cost of consumption: 860  
140 PIPELINE 44,  
141     between: 44 and 44,  
142     cost of consumption: 430  
143 PIPELINE 45,  
144     between: 45 and 45,  
145     cost of consumption: 978  
146 PIPELINE 46,  
147     between: 46 and 46,  
148     cost of consumption: 836  
149 PIPELINE 47,  
150     between: 47 and 47,  
151     cost of consumption: 822  
152 PIPELINE 48,  
153     between: 48 and 48,  
154     cost of consumption: 211  
155 PIPELINE 49,  
156     between: 49 and 49,  
157     cost of consumption: 581  
158 PIPELINE 50,  
159     between: 50 and 50,  
160     cost of consumption: 848  
161 PIPELINE 51,  
162     between: 51 and 51,  
163     cost of consumption: 269  
164 PIPELINE 52,  
165     between: 52 and 52,  
166     cost of consumption: 817  
167 PIPELINE 53,  
168     between: 53 and 53,  
169     cost of consumption: 895  
170 PIPELINE 54,  
171     between: 54 and 54,  
172     cost of consumption: 476  
173 PIPELINE 55,  
174     between: 55 and 55,  
175     cost of consumption: 202  
176 PIPELINE 56,  
177     between: 56 and 56,  
178     cost of consumption: 561  
179 PIPELINE 57,  
180     between: 57 and 57,  
181     cost of consumption: 39  
182 PIPELINE 58,  
183     between: 58 and 58,  
184     cost of consumption: 675  
185 PIPELINE 59,  
186     between: 59 and 59,  
187     cost of consumption: 815  
188 PIPELINE 60,  
189     between: 60 and 60,  
190     cost of consumption: 934  
191 PIPELINE 61,  
192     between: 61 and 61,  
193     cost of consumption: 879  
194 PIPELINE 62,  
195     between: 62 and 62,  
196     cost of consumption: 263  
197 PIPELINE 63,  
198     between: 63 and 63,  
199     cost of consumption: 109  
200 PIPELINE 64,  
201     between: 64 and 64,  
202     cost of consumption: 268  
203 PIPELINE 65,  
204     between: 65 and 65,  
205     cost of consumption: 789  
206 PIPELINE 66,  
207     between: 66 and 66,  
208     cost of consumption: 136  
209 PIPELINE 67,  
210     between: 67 and 67,  
211     cost of consumption: 105  
212 PIPELINE 68,  
213     between: 68 and 68,  
214     cost of consumption: 532  
215 PIPELINE 69,  
216     between: 69 and 69,  
217     cost of consumption: 208  
218 PIPELINE 70,  
219     between: 70 and 70.

```
--      .. . . . .  
220      cost of consumption: 286  
221 PIPELINE 71,  
222      between: 71 and 71,  
223      cost of consumption: 595  
224 PIPELINE 72,  
225      between: 72 and 72,  
226      cost of consumption: 820  
227 PIPELINE 73,  
228      between: 73 and 73,  
229      cost of consumption: 574  
230 PIPELINE 74,  
231      between: 74 and 74,  
232      cost of consumption: 450  
233 PIPELINE 75,  
234      between: 75 and 75,  
235      cost of consumption: 597  
236 PIPELINE 76,  
237      between: 76 and 76,  
238      cost of consumption: 547  
239 PIPELINE 77,  
240      between: 77 and 77,  
241      cost of consumption: 634  
242 PIPELINE 78,  
243      between: 78 and 78,  
244      cost of consumption: 766  
245 PIPELINE 79,  
246      between: 79 and 79,  
247      cost of consumption: 754  
248 PIPELINE 80,  
249      between: 80 and 80,  
250      cost of consumption: 210  
251 PIPELINE 81,  
252      between: 81 and 81,  
253      cost of consumption: 609  
254 PIPELINE 82,  
255      between: 82 and 82,  
256      cost of consumption: 370  
257 PIPELINE 83,  
258      between: 83 and 83,  
259      cost of consumption: 375  
260 PIPELINE 84,  
261      between: 84 and 84,  
262      cost of consumption: 851  
263 PIPELINE 85,  
264      between: 85 and 85,  
265      cost of consumption: 842  
266 PIPELINE 86,  
267      between: 86 and 86,  
268      cost of consumption: 572  
269 PIPELINE 87,  
270      between: 87 and 87,  
271      cost of consumption: 407  
272 PIPELINE 88,  
273      between: 88 and 88,  
274      cost of consumption: 876  
275 PIPELINE 89,  
276      between: 89 and 89,  
277      cost of consumption: 594  
278 PIPELINE 90,  
279      between: 90 and 90,  
280      cost of consumption: 569  
281 PIPELINE 91,  
282      between: 91 and 91,  
283      cost of consumption: 157  
284 PIPELINE 92,  
285      between: 92 and 92,  
286      cost of consumption: 468  
287 PIPELINE 93,  
288      between: 93 and 93,  
289      cost of consumption: 827  
290 PIPELINE 94,  
291      between: 94 and 94,  
292      cost of consumption: 261  
293 PIPELINE 95,  
294      between: 95 and 95,  
295      cost of consumption: 732  
296 PIPELINE 96,  
297      between: 96 and 96,  
298      cost of consumption: 612  
299 PIPELINE 97,  
300      between: 97 and 97,  
301      cost of consumption: 745  
302 PIPELINE 98,  
303      between: 98 and 98,  
304      cost of consumption: 832  
305 PIPELINE 99,  
306      between: 99 and 99,  
307      cost of consumption: 491  
308 PIPELINE 100,  
309      between: 100 and 100,  
310      cost of consumption: 948  
311 PIPELINE 101,  
312      between: 101 and 101,  
313      cost of consumption: 465  
314 PIPELINE 102,  
315      between: 102 and 102,  
316      cost of consumption: 434  
317 PIPELINE 103,  
318      between: 103 and 103,  
319      cost of consumption: 115  
320 PIPELINE 104,  
321      between: 104 and 104,  
322      cost of consumption: 35  
323 PIPELINE 105,  
324      between: 105 and 105,  
325      cost of consumption: 231  
326 PIPELINE 106,  
327      between: 106 and 106,  
328      cost of consumption: 707
```

329 PIPELINE 107,  
330     between: 107 and 107,  
331     cost of consumption: 577  
332 PIPELINE 108,  
333     between: 108 and 108,  
334     cost of consumption: 860  
335 PIPELINE 109,  
336     between: 109 and 109,  
337     cost of consumption: 468  
338 PIPELINE 110,  
339     between: 110 and 110,  
340     cost of consumption: 326  
341 PIPELINE 111,  
342     between: 111 and 111,  
343     cost of consumption: 418  
344 PIPELINE 112,  
345     between: 112 and 112,  
346     cost of consumption: 424  
347 PIPELINE 113,  
348     between: 113 and 113,  
349     cost of consumption: 692  
350 PIPELINE 114,  
351     between: 114 and 114,  
352     cost of consumption: 788  
353 PIPELINE 115,  
354     between: 115 and 115,  
355     cost of consumption: 270  
356 PIPELINE 116,  
357     between: 116 and 116,  
358     cost of consumption: 881  
359 PIPELINE 117,  
360     between: 117 and 117,  
361     cost of consumption: 707  
362 PIPELINE 118,  
363     between: 118 and 118,  
364     cost of consumption: 672  
365 PIPELINE 119,  
366     between: 119 and 119,  
367     cost of consumption: 752  
368 PIPELINE 120,  
369     between: 120 and 120,  
370     cost of consumption: 296  
371 PIPELINE 121,  
372     between: 121 and 121,  
373     cost of consumption: 236  
374 PIPELINE 122,  
375     between: 122 and 122,  
376     cost of consumption: 256  
377 PIPELINE 123,  
378     between: 123 and 123,  
379     cost of consumption: 111  
380 PIPELINE 124,  
381     between: 124 and 124,  
382     cost of consumption: 410  
383 PIPELINE 125,  
384     between: 125 and 125,  
385     cost of consumption: 513  
386 PIPELINE 126,  
387     between: 126 and 126,  
388     cost of consumption: 838  
389 PIPELINE 127,  
390     between: 127 and 127,  
391     cost of consumption: 17  
392 PIPELINE 128,  
393     between: 128 and 128,  
394     cost of consumption: 253  
395 PIPELINE 129,  
396     between: 129 and 129,  
397     cost of consumption: 18  
398 PIPELINE 130,  
399     between: 130 and 130,  
400     cost of consumption: 504  
401 PIPELINE 131,  
402     between: 131 and 131,  
403     cost of consumption: 548  
404 PIPELINE 132,  
405     between: 132 and 132,  
406     cost of consumption: 830  
407 PIPELINE 133,  
408     between: 133 and 133,  
409     cost of consumption: 285  
410 PIPELINE 134,  
411     between: 134 and 134,  
412     cost of consumption: 658  
413 PIPELINE 135,  
414     between: 135 and 135,  
415     cost of consumption: 860  
416 PIPELINE 136,  
417     between: 136 and 136,  
418     cost of consumption: 511  
419 PIPELINE 137,  
420     between: 137 and 137,  
421     cost of consumption: 712  
422 PIPELINE 138,  
423     between: 138 and 138,  
424     cost of consumption: 433  
425 PIPELINE 139,  
426     between: 139 and 139,  
427     cost of consumption: 367  
428 PIPELINE 140,  
429     between: 140 and 140,  
430     cost of consumption: 175  
431 PIPELINE 141,  
432     between: 141 and 141,  
433     cost of consumption: 106  
434 PIPELINE 142,  
435     between: 142 and 142,  
436     cost of consumption: 132  
437 PIPELINE 143,  
438     between: 143 and 143

430        between: 143 and 143,  
431        cost of consumption: 946  
440 PIPELINE 144,  
441        between: 144 and 144,  
442        cost of consumption: 145  
443 PIPELINE 145,  
444        between: 145 and 145,  
445        cost of consumption: 915  
446 PIPELINE 146,  
447        between: 146 and 146,  
448        cost of consumption: 211  
449 PIPELINE 147,  
450        between: 147 and 147,  
451        cost of consumption: 373  
452 PIPELINE 148,  
453        between: 148 and 148,  
454        cost of consumption: 969  
455 PIPELINE 149,  
456        between: 149 and 149,  
457        cost of consumption: 230  
458 PIPELINE 150,  
459        between: 150 and 150,  
460        cost of consumption: 120  
461 PIPELINE 151,  
462        between: 151 and 151,  
463        cost of consumption: 260  
464 PIPELINE 152,  
465        between: 152 and 152,  
466        cost of consumption: 813  
467 PIPELINE 153,  
468        between: 153 and 153,  
469        cost of consumption: 724  
470 PIPELINE 154,  
471        between: 154 and 154,  
472        cost of consumption: 366  
473 PIPELINE 155,  
474        between: 155 and 155,  
475        cost of consumption: 218  
476 PIPELINE 156,  
477        between: 156 and 156,  
478        cost of consumption: 232  
479 PIPELINE 157,  
480        between: 157 and 157,  
481        cost of consumption: 552  
482 PIPELINE 158,  
483        between: 158 and 158,  
484        cost of consumption: 583  
485 PIPELINE 159,  
486        between: 159 and 159,  
487        cost of consumption: 832  
488 PIPELINE 160,  
489        between: 160 and 160,  
490        cost of consumption: 917  
491 PIPELINE 161,  
492        between: 161 and 161,  
493        cost of consumption: 434  
494 PIPELINE 162,  
495        between: 162 and 162,  
496        cost of consumption: 375  
497 PIPELINE 163,  
498        between: 163 and 163,  
499        cost of consumption: 742  
500 PIPELINE 164,  
501        between: 164 and 164,  
502        cost of consumption: 714  
503 PIPELINE 165,  
504        between: 165 and 165,  
505        cost of consumption: 380  
506 PIPELINE 166,  
507        between: 166 and 166,  
508        cost of consumption: 950  
509 PIPELINE 167,  
510        between: 167 and 167,  
511        cost of consumption: 220  
512 PIPELINE 168,  
513        between: 168 and 168,  
514        cost of consumption: 87  
515 PIPELINE 169,  
516        between: 169 and 169,  
517        cost of consumption: 730  
518 PIPELINE 170,  
519        between: 170 and 170,  
520        cost of consumption: 934  
521 PIPELINE 171,  
522        between: 171 and 171,  
523        cost of consumption: 257  
524 PIPELINE 172,  
525        between: 172 and 172,  
526        cost of consumption: 183  
527 PIPELINE 173,  
528        between: 173 and 173,  
529        cost of consumption: 413  
530 PIPELINE 174,  
531        between: 174 and 174,  
532        cost of consumption: 550  
533 PIPELINE 175,  
534        between: 175 and 175,  
535        cost of consumption: 324  
536 PIPELINE 176,  
537        between: 176 and 176,  
538        cost of consumption: 323  
539 PIPELINE 177,  
540        between: 177 and 177,  
541        cost of consumption: 756  
542 PIPELINE 178,  
543        between: 178 and 178,  
544        cost of consumption: 44  
545 PIPELINE 179,  
546        between: 179 and 179,  
547        cost of consumption: 287

548 PIPELINE 180,  
549     between: 180 and 180,  
550     cost of consumption: 981  
551 PIPELINE 181,  
552     between: 181 and 181,  
553     cost of consumption: 512  
554 PIPELINE 182,  
555     between: 182 and 182,  
556     cost of consumption: 894  
557 PIPELINE 183,  
558     between: 183 and 183,  
559     cost of consumption: 141  
560 PIPELINE 184,  
561     between: 184 and 184,  
562     cost of consumption: 231  
563 PIPELINE 185,  
564     between: 185 and 185,  
565     cost of consumption: 608  
566 PIPELINE 186,  
567     between: 186 and 186,  
568     cost of consumption: 706  
569 PIPELINE 187,  
570     between: 187 and 187,  
571     cost of consumption: 458  
572 PIPELINE 188,  
573     between: 188 and 188,  
574     cost of consumption: 507  
575 PIPELINE 189,  
576     between: 189 and 189,  
577     cost of consumption: 284  
578 PIPELINE 190,  
579     between: 190 and 190,  
580     cost of consumption: 637  
581 PIPELINE 191,  
582     between: 191 and 191,  
583     cost of consumption: 419  
584 PIPELINE 192,  
585     between: 192 and 192,  
586     cost of consumption: 713  
587 PIPELINE 193,  
588     between: 193 and 193,  
589     cost of consumption: 359  
590 PIPELINE 194,  
591     between: 194 and 194,  
592     cost of consumption: 508  
593 PIPELINE 195,  
594     between: 195 and 195,  
595     cost of consumption: 774  
596 PIPELINE 196,  
597     between: 196 and 196,  
598     cost of consumption: 734  
599 PIPELINE 197,  
600     between: 197 and 197,  
601     cost of consumption: 453  
602 PIPELINE 198,  
603     between: 198 and 198,  
604     cost of consumption: 342  
605 PIPELINE 199,  
606     between: 199 and 199,  
607     cost of consumption: 816  
608 PIPELINE 200,  
609     between: 200 and 200,  
610     cost of consumption: 178  
611 PIPELINE 201,  
612     between: 201 and 201,  
613     cost of consumption: 623  
614 PIPELINE 202,  
615     between: 202 and 202,  
616     cost of consumption: 420  
617 PIPELINE 203,  
618     between: 203 and 203,  
619     cost of consumption: 357  
620 PIPELINE 204,  
621     between: 204 and 204,  
622     cost of consumption: 32  
623 PIPELINE 205,  
624     between: 205 and 205,  
625     cost of consumption: 965  
626 PIPELINE 206,  
627     between: 206 and 206,  
628     cost of consumption: 28  
629 PIPELINE 207,  
630     between: 207 and 207,  
631     cost of consumption: 350  
632 PIPELINE 208,  
633     between: 208 and 208,  
634     cost of consumption: 68  
635 PIPELINE 209,  
636     between: 209 and 209,  
637     cost of consumption: 67  
638 PIPELINE 210,  
639     between: 210 and 210,  
640     cost of consumption: 985  
641 PIPELINE 211,  
642     between: 211 and 211,  
643     cost of consumption: 396  
644 PIPELINE 212,  
645     between: 212 and 212,  
646     cost of consumption: 926  
647 PIPELINE 213,  
648     between: 213 and 213,  
649     cost of consumption: 226  
650 PIPELINE 214,  
651     between: 214 and 214,  
652     cost of consumption: 532  
653 PIPELINE 215,  
654     between: 215 and 215,  
655     cost of consumption: 152  
656 PIPELINE 216,

551        between: 216 and 216,  
552        cost of consumption: 829  
553 PIPELINE 217,  
554        between: 217 and 217,  
555        cost of consumption: 233  
556 PIPELINE 218,  
557        between: 218 and 218,  
558        cost of consumption: 957  
559 PIPELINE 219,  
560        between: 219 and 219,  
561        cost of consumption: 331  
562 PIPELINE 220,  
563        between: 220 and 220,  
564        cost of consumption: 865  
565 PIPELINE 221,  
566        between: 221 and 221,  
567        cost of consumption: 589  
568 PIPELINE 222,  
569        between: 222 and 222,  
570        cost of consumption: 97  
571 PIPELINE 223,  
572        between: 223 and 223,  
573        cost of consumption: 925  
574 PIPELINE 224,  
575        between: 224 and 224,  
576        cost of consumption: 295  
577 PIPELINE 225,  
578        between: 225 and 225,  
579        cost of consumption: 601  
580 PIPELINE 226,  
581        between: 226 and 226,  
582        cost of consumption: 695  
583 PIPELINE 227,  
584        between: 227 and 227,  
585        cost of consumption: 376  
586 PIPELINE 228,  
587        between: 228 and 228,  
588        cost of consumption: 401  
589 PIPELINE 229,  
590        between: 229 and 229,  
591        cost of consumption: 384  
592 PIPELINE 230,  
593        between: 230 and 230,  
594        cost of consumption: 187  
595 PIPELINE 231,  
596        between: 231 and 231,  
597        cost of consumption: 927  
598 PIPELINE 232,  
599        between: 232 and 232,  
600        cost of consumption: 1002  
601 PIPELINE 233,  
602        between: 233 and 233,  
603        cost of consumption: 954  
604 PIPELINE 234,  
605        between: 234 and 234,  
606        cost of consumption: 631  
607 PIPELINE 235,  
608        between: 235 and 235,  
609        cost of consumption: 29  
610 PIPELINE 236,  
611        between: 236 and 236,  
612        cost of consumption: 266  
613 PIPELINE 237,  
614        between: 237 and 237,  
615        cost of consumption: 6  
616 PIPELINE 238,  
617        between: 238 and 238,  
618        cost of consumption: 727  
619 PIPELINE 239,  
620        between: 239 and 239,  
621        cost of consumption: 329  
622 PIPELINE 240,  
623        between: 240 and 240,  
624        cost of consumption: 420  
625 PIPELINE 241,  
626        between: 241 and 241,  
627        cost of consumption: 59  
628 PIPELINE 242,  
629        between: 242 and 242,  
630        cost of consumption: 720  
631 PIPELINE 243,  
632        between: 243 and 243,  
633        cost of consumption: 342  
634 PIPELINE 244,  
635        between: 244 and 244,  
636        cost of consumption: 280  
637 PIPELINE 245,  
638        between: 245 and 245,  
639        cost of consumption: 599  
640 PIPELINE 246,  
641        between: 246 and 246,  
642        cost of consumption: 489  
643 PIPELINE 247,  
644        between: 247 and 247,  
645        cost of consumption: 457  
646 PIPELINE 248,  
647        between: 248 and 248,  
648        cost of consumption: 180  
649 PIPELINE 249,  
650        between: 249 and 249,  
651        cost of consumption: 442  
652 PIPELINE 250,  
653        between: 250 and 250,  
654        cost of consumption: 135  
655 PIPELINE 251,  
656        between: 251 and 251,  
657        cost of consumption: 40  
658 PIPELINE 252,  
659        between: 252 and 252,  
660        cost of consumption: 378

767 PIPELINE 253,  
768     between: 253 and 253,  
769     cost of consumption: 228  
770 PIPELINE 254,  
771     between: 254 and 254,  
772     cost of consumption: 312  
773 PIPELINE 255,  
774     between: 255 and 255,  
775     cost of consumption: 21  
776 PIPELINE 256,  
777     between: 256 and 256,  
778     cost of consumption: 176  
779 PIPELINE 257,  
780     between: 257 and 257,  
781     cost of consumption: 354  
782 PIPELINE 258,  
783     between: 258 and 258,  
784     cost of consumption: 392  
785 PIPELINE 259,  
786     between: 259 and 259,  
787     cost of consumption: 924  
788 PIPELINE 260,  
789     between: 260 and 260,  
790     cost of consumption: 733  
791 PIPELINE 261,  
792     between: 261 and 261,  
793     cost of consumption: 927  
794 PIPELINE 262,  
795     between: 262 and 262,  
796     cost of consumption: 846  
797 PIPELINE 263,  
798     between: 263 and 263,  
799     cost of consumption: 83  
800 PIPELINE 264,  
801     between: 264 and 264,  
802     cost of consumption: 876  
803 PIPELINE 265,  
804     between: 265 and 265,  
805     cost of consumption: 472  
806 PIPELINE 266,  
807     between: 266 and 266,  
808     cost of consumption: 459  
809 PIPELINE 267,  
810     between: 267 and 267,  
811     cost of consumption: 490  
812 PIPELINE 268,  
813     between: 268 and 268,  
814     cost of consumption: 825  
815 PIPELINE 269,  
816     between: 269 and 269,  
817     cost of consumption: 533  
818 PIPELINE 270,  
819     between: 270 and 270,  
820     cost of consumption: 814  
821 PIPELINE 271,  
822     between: 271 and 271,  
823     cost of consumption: 241  
824 PIPELINE 272,  
825     between: 272 and 272,  
826     cost of consumption: 587  
827 PIPELINE 273,  
828     between: 273 and 273,  
829     cost of consumption: 882  
830 PIPELINE 274,  
831     between: 274 and 274,  
832     cost of consumption: 578  
833 PIPELINE 275,  
834     between: 275 and 275,  
835     cost of consumption: 215  
836 PIPELINE 276,  
837     between: 276 and 276,  
838     cost of consumption: 828  
839 PIPELINE 277,  
840     between: 277 and 277,  
841     cost of consumption: 414  
842 PIPELINE 278,  
843     between: 278 and 278,  
844     cost of consumption: 19  
845 PIPELINE 279,  
846     between: 279 and 279,  
847     cost of consumption: 1003  
848 PIPELINE 280,  
849     between: 280 and 280,  
850     cost of consumption: 203  
851 PIPELINE 281,  
852     between: 281 and 281,  
853     cost of consumption: 149  
854 PIPELINE 282,  
855     between: 282 and 282,  
856     cost of consumption: 390  
857 PIPELINE 283,  
858     between: 283 and 283,  
859     cost of consumption: 929  
860 PIPELINE 284,  
861     between: 284 and 284,  
862     cost of consumption: 372  
863 PIPELINE 285,  
864     between: 285 and 285,  
865     cost of consumption: 698  
866 PIPELINE 286,  
867     between: 286 and 286,  
868     cost of consumption: 945  
869 PIPELINE 287,  
870     between: 287 and 287,  
871     cost of consumption: 895  
872 PIPELINE 288,  
873     between: 288 and 288,  
874     cost of consumption: 399  
875 PIPELINE 289,  
--- . . . . .

876        between: 289 and 289,  
877        cost of consumption: 332  
878 PIPELINE 290,  
879        between: 290 and 290,  
880        cost of consumption: 815  
881 PIPELINE 291,  
882        between: 291 and 291,  
883        cost of consumption: 480  
884 PIPELINE 292,  
885        between: 292 and 292,  
886        cost of consumption: 606  
887 PIPELINE 293,  
888        between: 293 and 293,  
889        cost of consumption: 656  
890 PIPELINE 294,  
891        between: 294 and 294,  
892        cost of consumption: 558  
893 PIPELINE 295,  
894        between: 295 and 295,  
895        cost of consumption: 830  
896 PIPELINE 296,  
897        between: 296 and 296,  
898        cost of consumption: 476  
899 PIPELINE 297,  
900        between: 297 and 297,  
901        cost of consumption: 12  
902 PIPELINE 298,  
903        between: 298 and 298,  
904        cost of consumption: 315  
905 PIPELINE 299,  
906        between: 299 and 299,  
907        cost of consumption: 648  
908 PIPELINE 300,  
909        between: 300 and 300,  
910        cost of consumption: 893  
911 PIPELINE 301,  
912        between: 301 and 301,  
913        cost of consumption: 476  
914 PIPELINE 302,  
915        between: 302 and 302,  
916        cost of consumption: 884  
917 PIPELINE 303,  
918        between: 303 and 303,  
919        cost of consumption: 827  
920 PIPELINE 304,  
921        between: 304 and 304,  
922        cost of consumption: 353  
923 PIPELINE 305,  
924        between: 305 and 305,  
925        cost of consumption: 809  
926 PIPELINE 306,  
927        between: 306 and 306,  
928        cost of consumption: 389  
929 PIPELINE 307,  
930        between: 307 and 307,  
931        cost of consumption: 177  
932 PIPELINE 308,  
933        between: 308 and 308,  
934        cost of consumption: 219  
935 PIPELINE 309,  
936        between: 309 and 309,  
937        cost of consumption: 403  
938 PIPELINE 310,  
939        between: 310 and 310,  
940        cost of consumption: 527  
941 PIPELINE 311,  
942        between: 311 and 311,  
943        cost of consumption: 769  
944 PIPELINE 312,  
945        between: 312 and 312,  
946        cost of consumption: 900  
947 PIPELINE 313,  
948        between: 313 and 313,  
949        cost of consumption: 265  
950 PIPELINE 314,  
951        between: 314 and 314,  
952        cost of consumption: 693  
953 PIPELINE 315,  
954        between: 315 and 315,  
955        cost of consumption: 267  
956 PIPELINE 316,  
957        between: 316 and 316,  
958        cost of consumption: 310  
959 PIPELINE 317,  
960        between: 317 and 317,  
961        cost of consumption: 633  
962 PIPELINE 318,  
963        between: 318 and 318,  
964        cost of consumption: 510  
965 PIPELINE 319,  
966        between: 319 and 319,  
967        cost of consumption: 704  
968 PIPELINE 320,  
969        between: 320 and 320,  
970        cost of consumption: 313  
971 PIPELINE 321,  
972        between: 321 and 321,  
973        cost of consumption: 320  
974 PIPELINE 322,  
975        between: 322 and 322,  
976        cost of consumption: 179  
977 PIPELINE 323,  
978        between: 323 and 323,  
979        cost of consumption: 914  
980 PIPELINE 324,  
981        between: 324 and 324,  
982        cost of consumption: 323  
983 PIPELINE 325,  
984        between: 325 and 325,  
985        cost of consumption: 84

986       cost of consumption: 34  
987     PIPELINE 326,  
988       between: 326 and 326,  
989       cost of consumption: 91  
990     PIPELINE 327,  
991       between: 327 and 327,  
992       cost of consumption: 146  
993     PIPELINE 328,  
994       between: 328 and 328,  
995       cost of consumption: 444  
996     PIPELINE 329,  
997       between: 329 and 329,  
998       cost of consumption: 401  
999     PIPELINE 330,  
1000      between: 330 and 330,  
1000      cost of consumption: 790  
1001     PIPELINE 331,  
1002      between: 331 and 331,  
1003      cost of consumption: 332  
1004     PIPELINE 332,  
1005      between: 332 and 332,  
1006      cost of consumption: 873  
1007     PIPELINE 333,  
1008      between: 333 and 333,  
1009      cost of consumption: 669  
1010     PIPELINE 334,  
1011      between: 334 and 334,  
1012      cost of consumption: 154  
1013     PIPELINE 335,  
1014      between: 335 and 335,  
1015      cost of consumption: 573  
1016     PIPELINE 336,  
1017      between: 336 and 336,  
1018      cost of consumption: 826  
1019     PIPELINE 337,  
1020      between: 337 and 337,  
1021      cost of consumption: 539  
1022     PIPELINE 338,  
1023      between: 338 and 338,  
1024      cost of consumption: 97  
1025     PIPELINE 339,  
1026      between: 339 and 339,  
1027      cost of consumption: 40  
1028     PIPELINE 340,  
1029      between: 340 and 340,  
1030      cost of consumption: 289  
1031     PIPELINE 341,  
1032      between: 341 and 341,  
1033      cost of consumption: 972  
1034     PIPELINE 342,  
1035      between: 342 and 342,  
1036      cost of consumption: 804  
1037     PIPELINE 343,  
1038      between: 343 and 343,  
1039      cost of consumption: 184  
1040     PIPELINE 344,  
1041      between: 344 and 344,  
1042      cost of consumption: 232  
1043     PIPELINE 345,  
1044      between: 345 and 345,  
1045      cost of consumption: 845  
1046     PIPELINE 346,  
1047      between: 346 and 346,  
1048      cost of consumption: 799  
1049     PIPELINE 347,  
1050      between: 347 and 347,  
1051      cost of consumption: 537  
1052     PIPELINE 348,  
1053      between: 348 and 348,  
1054      cost of consumption: 473  
1055     PIPELINE 349,  
1056      between: 349 and 349,  
1057      cost of consumption: 304  
1058     PIPELINE 350,  
1059      between: 350 and 350,  
1060      cost of consumption: 236  
1061     PIPELINE 351,  
1062      between: 351 and 351,  
1063      cost of consumption: 133  
1064     PIPELINE 352,  
1065      between: 352 and 352,  
1066      cost of consumption: 619  
1067     PIPELINE 353,  
1068      between: 353 and 353,  
1069      cost of consumption: 763  
1070     PIPELINE 354,  
1071      between: 354 and 354,  
1072      cost of consumption: 395  
1073     PIPELINE 355,  
1074      between: 355 and 355,  
1075      cost of consumption: 289  
1076     PIPELINE 356,  
1077      between: 356 and 356,  
1078      cost of consumption: 842  
1079     PIPELINE 357,  
1080      between: 357 and 357,  
1081      cost of consumption: 481  
1082     PIPELINE 358,  
1083      between: 358 and 358,  
1084      cost of consumption: 431  
1085     PIPELINE 359,  
1086      between: 359 and 359,  
1087      cost of consumption: 281  
1088     PIPELINE 360,  
1089      between: 360 and 360,  
1090      cost of consumption: 230  
1091     PIPELINE 361,  
1092      between: 361 and 361,  
1093      cost of consumption: 216  
1094     PIPELINE 362,

1095        between: 362 and 362,  
1096        cost of consumption: 608  
1097 PIPELINE 363,  
1098        between: 363 and 363,  
1099        cost of consumption: 450  
1100 PIPELINE 364,  
1101        between: 364 and 364,  
1102        cost of consumption: 880  
1103 PIPELINE 365,  
1104        between: 365 and 365,  
1105        cost of consumption: 110  
1106 PIPELINE 366,  
1107        between: 366 and 366,  
1108        cost of consumption: 18  
1109 PIPELINE 367,  
1110        between: 367 and 367,  
1111        cost of consumption: 701  
1112 PIPELINE 368,  
1113        between: 368 and 368,  
1114        cost of consumption: 996  
1115 PIPELINE 369,  
1116        between: 369 and 369,  
1117        cost of consumption: 463  
1118 PIPELINE 370,  
1119        between: 370 and 370,  
1120        cost of consumption: 88  
1121 PIPELINE 371,  
1122        between: 371 and 371,  
1123        cost of consumption: 280  
1124 PIPELINE 372,  
1125        between: 372 and 372,  
1126        cost of consumption: 430  
1127 PIPELINE 373,  
1128        between: 373 and 373,  
1129        cost of consumption: 240  
1130 PIPELINE 374,  
1131        between: 374 and 374,  
1132        cost of consumption: 460  
1133 PIPELINE 375,  
1134        between: 375 and 375,  
1135        cost of consumption: 657  
1136 PIPELINE 376,  
1137        between: 376 and 376,  
1138        cost of consumption: 80  
1139 PIPELINE 377,  
1140        between: 377 and 377,  
1141        cost of consumption: 254  
1142 PIPELINE 378,  
1143        between: 378 and 378,  
1144        cost of consumption: 189  
1145 PIPELINE 379,  
1146        between: 379 and 379,  
1147        cost of consumption: 900  
1148 PIPELINE 380,  
1149        between: 380 and 380,  
1150        cost of consumption: 905  
1151 PIPELINE 381,  
1152        between: 381 and 381,  
1153        cost of consumption: 772  
1154 PIPELINE 382,  
1155        between: 382 and 382,  
1156        cost of consumption: 29  
1157 PIPELINE 383,  
1158        between: 383 and 383,  
1159        cost of consumption: 519  
1160 PIPELINE 384,  
1161        between: 384 and 384,  
1162        cost of consumption: 530  
1163 PIPELINE 385,  
1164        between: 385 and 385,  
1165        cost of consumption: 419  
1166 PIPELINE 386,  
1167        between: 386 and 386,  
1168        cost of consumption: 803  
1169 PIPELINE 387,  
1170        between: 387 and 387,  
1171        cost of consumption: 368  
1172 PIPELINE 388,  
1173        between: 388 and 388,  
1174        cost of consumption: 247  
1175 PIPELINE 389,  
1176        between: 389 and 389,  
1177        cost of consumption: 581  
1178 PIPELINE 390,  
1179        between: 390 and 390,  
1180        cost of consumption: 996  
1181 PIPELINE 391,  
1182        between: 391 and 391,  
1183        cost of consumption: 472  
1184 PIPELINE 392,  
1185        between: 392 and 392,  
1186        cost of consumption: 792  
1187 PIPELINE 393,  
1188        between: 393 and 393,  
1189        cost of consumption: 952  
1190 PIPELINE 394,  
1191        between: 394 and 394,  
1192        cost of consumption: 917  
1193 PIPELINE 395,  
1194        between: 395 and 395,  
1195        cost of consumption: 20  
1196 PIPELINE 396,  
1197        between: 396 and 396,  
1198        cost of consumption: 57  
1199 PIPELINE 397,  
1200        between: 397 and 397,  
1201        cost of consumption: 283  
1202 PIPELINE 398,  
1203        between: 398 and 398,  
1204        cost of consumption: 716

1294 COST OF CONSUMPTION: 710  
1295 PIPELINE 399,  
1296   between: 399 and 399,  
1297    cost of consumption: 48  
1298 PIPELINE 400,  
1299   between: 400 and 400,  
1300    cost of consumption: 741  
1301 PIPELINE 401,  
1302   between: 401 and 401,  
1303    cost of consumption: 152  
1304 PIPELINE 402,  
1305   between: 402 and 402,  
1306    cost of consumption: 675  
1307 PIPELINE 403,  
1308   between: 403 and 403,  
1309    cost of consumption: 518  
1310 PIPELINE 404,  
1311   between: 404 and 404,  
1312    cost of consumption: 739  
1313 PIPELINE 405,  
1314   between: 405 and 405,  
1315    cost of consumption: 130  
1316 PIPELINE 406,  
1317   between: 406 and 406,  
1318    cost of consumption: 170  
1319 PIPELINE 407,  
1320   between: 407 and 407,  
1321    cost of consumption: 814  
1322 PIPELINE 408,  
1323   between: 408 and 408,  
1324    cost of consumption: 731  
1325 PIPELINE 409,  
1326   between: 409 and 409,  
1327    cost of consumption: 706  
1328 PIPELINE 410,  
1329   between: 410 and 410,  
1330    cost of consumption: 709  
1331 PIPELINE 411,  
1332   between: 411 and 411,  
1333    cost of consumption: 631  
1334 PIPELINE 412,  
1335   between: 412 and 412,  
1336    cost of consumption: 825  
1337 PIPELINE 413,  
1338   between: 413 and 413,  
1339    cost of consumption: 85  
1340 PIPELINE 414,  
1341   between: 414 and 414,  
1342    cost of consumption: 497  
1343 PIPELINE 415,  
1344   between: 415 and 415,  
1345    cost of consumption: 351  
1346 PIPELINE 416,  
1347   between: 416 and 416,  
1348    cost of consumption: 851  
1349 PIPELINE 417,  
1350   between: 417 and 417,  
1351    cost of consumption: 648  
1352 PIPELINE 418,  
1353   between: 418 and 418,  
1354    cost of consumption: 66  
1355 PIPELINE 419,  
1356   between: 419 and 419,  
1357    cost of consumption: 446  
1358 PIPELINE 420,  
1359   between: 420 and 420,  
1360    cost of consumption: 224  
1361 PIPELINE 421,  
1362   between: 421 and 421,  
1363    cost of consumption: 409  
1364 PIPELINE 422,  
1365   between: 422 and 422,  
1366    cost of consumption: 913  
1367 PIPELINE 423,  
1368   between: 423 and 423,  
1369    cost of consumption: 364  
1370 PIPELINE 424,  
1371   between: 424 and 424,  
1372    cost of consumption: 356  
1373 PIPELINE 425,  
1374   between: 425 and 425,  
1375    cost of consumption: 178  
1376 PIPELINE 426,  
1377   between: 426 and 426,  
1378    cost of consumption: 379  
1379 PIPELINE 427,  
1380   between: 427 and 427,  
1381    cost of consumption: 760  
1382 PIPELINE 428,  
1383   between: 428 and 428,  
1384    cost of consumption: 808  
1385 PIPELINE 429,  
1386   between: 429 and 429,  
1387    cost of consumption: 442  
1388 PIPELINE 430,  
1389   between: 430 and 430,  
1390    cost of consumption: 155  
1391 PIPELINE 431,  
1392   between: 431 and 431,  
1393    cost of consumption: 896  
1394 PIPELINE 432,  
1395   between: 432 and 432,  
1396    cost of consumption: 589  
1397 PIPELINE 433,  
1398   between: 433 and 433,  
1399    cost of consumption: 826  
1400 PIPELINE 434,  
1401   between: 434 and 434,  
1402    cost of consumption: 409  
1403 PIPELINE 435,

1314        between: 435 and 435,  
1315        cost of consumption: 323  
1316 PIPELINE 436,  
1317        between: 436 and 436,  
1318        cost of consumption: 303  
1319 PIPELINE 437,  
1320        between: 437 and 437,  
1321        cost of consumption: 926  
1322 PIPELINE 438,  
1323        between: 438 and 438,  
1324        cost of consumption: 484  
1325 PIPELINE 439,  
1326        between: 439 and 439,  
1327        cost of consumption: 382  
1328 PIPELINE 440,  
1329        between: 440 and 440,  
1330        cost of consumption: 627  
1331 PIPELINE 441,  
1332        between: 441 and 441,  
1333        cost of consumption: 541  
1334 PIPELINE 442,  
1335        between: 442 and 442,  
1336        cost of consumption: 360  
1337 PIPELINE 443,  
1338        between: 443 and 443,  
1339        cost of consumption: 799  
1340 PIPELINE 444,  
1341        between: 444 and 444,  
1342        cost of consumption: 973  
1343 PIPELINE 445,  
1344        between: 445 and 445,  
1345        cost of consumption: 205  
1346 PIPELINE 446,  
1347        between: 446 and 446,  
1348        cost of consumption: 145  
1349 PIPELINE 447,  
1350        between: 447 and 447,  
1351        cost of consumption: 820  
1352 PIPELINE 448,  
1353        between: 448 and 448,  
1354        cost of consumption: 200  
1355 PIPELINE 449,  
1356        between: 449 and 449,  
1357        cost of consumption: 558  
1358 PIPELINE 450,  
1359        between: 450 and 450,  
1360        cost of consumption: 261  
1361 PIPELINE 451,  
1362        between: 451 and 451,  
1363        cost of consumption: 771  
1364 PIPELINE 452,  
1365        between: 452 and 452,  
1366        cost of consumption: 315  
1367 PIPELINE 453,  
1368        between: 453 and 453,  
1369        cost of consumption: 521  
1370 PIPELINE 454,  
1371        between: 454 and 454,  
1372        cost of consumption: 130  
1373 PIPELINE 455,  
1374        between: 455 and 455,  
1375        cost of consumption: 666  
1376 PIPELINE 456,  
1377        between: 456 and 456,  
1378        cost of consumption: 46  
1379 PIPELINE 457,  
1380        between: 457 and 457,  
1381        cost of consumption: 504  
1382 PIPELINE 458,  
1383        between: 458 and 458,  
1384        cost of consumption: 774  
1385 PIPELINE 459,  
1386        between: 459 and 459,  
1387        cost of consumption: 849  
1388 PIPELINE 460,  
1389        between: 460 and 460,  
1390        cost of consumption: 942  
1391 PIPELINE 461,  
1392        between: 461 and 461,  
1393        cost of consumption: 924  
1394 PIPELINE 462,  
1395        between: 462 and 462,  
1396        cost of consumption: 740  
1397 PIPELINE 463,  
1398        between: 463 and 463,  
1399        cost of consumption: 878  
1400 PIPELINE 464,  
1401        between: 464 and 464,  
1402        cost of consumption: 745  
1403 PIPELINE 465,  
1404        between: 465 and 465,  
1405        cost of consumption: 144  
1406 PIPELINE 466,  
1407        between: 466 and 466,  
1408        cost of consumption: 549  
1409 PIPELINE 467,  
1410        between: 467 and 467,  
1411        cost of consumption: 396  
1412 PIPELINE 468,  
1413        between: 468 and 468,  
1414        cost of consumption: 65  
1415 PIPELINE 469,  
1416        between: 469 and 469,  
1417        cost of consumption: 380  
1418 PIPELINE 470,  
1419        between: 470 and 470,  
1420        cost of consumption: 773  
1421 PIPELINE 471,  
1422        between: 471 and 471,  
1423        cost of consumption: 22

1423       cost of consumption: 39  
1424 PIPELINE 472,  
1425       between: 472 and 472,  
1426       cost of consumption: 916  
1427 PIPELINE 473,  
1428       between: 473 and 473,  
1429       cost of consumption: 128  
1430 PIPELINE 474,  
1431       between: 474 and 474,  
1432       cost of consumption: 834  
1433 PIPELINE 475,  
1434       between: 475 and 475,  
1435       cost of consumption: 885  
1436 PIPELINE 476,  
1437       between: 476 and 476,  
1438       cost of consumption: 328  
1439 PIPELINE 477,  
1440       between: 477 and 477,  
1441       cost of consumption: 326  
1442 PIPELINE 478,  
1443       between: 478 and 478,  
1444       cost of consumption: 52  
1445 PIPELINE 479,  
1446       between: 479 and 479,  
1447       cost of consumption: 523  
1448 PIPELINE 480,  
1449       between: 480 and 480,  
1450       cost of consumption: 232  
1451 PIPELINE 481,  
1452       between: 481 and 481,  
1453       cost of consumption: 660  
1454 PIPELINE 482,  
1455       between: 482 and 482,  
1456       cost of consumption: 290  
1457 PIPELINE 483,  
1458       between: 483 and 483,  
1459       cost of consumption: 542  
1460 PIPELINE 484,  
1461       between: 484 and 484,  
1462       cost of consumption: 176  
1463 PIPELINE 485,  
1464       between: 485 and 485,  
1465       cost of consumption: 767  
1466 PIPELINE 486,  
1467       between: 486 and 486,  
1468       cost of consumption: 555  
1469 PIPELINE 487,  
1470       between: 487 and 487,  
1471       cost of consumption: 218  
1472 PIPELINE 488,  
1473       between: 488 and 488,  
1474       cost of consumption: 267  
1475 PIPELINE 489,  
1476       between: 489 and 489,  
1477       cost of consumption: 324  
1478 PIPELINE 490,  
1479       between: 490 and 490,  
1480       cost of consumption: 414  
1481 PIPELINE 491,  
1482       between: 491 and 491,  
1483       cost of consumption: 556  
1484 PIPELINE 492,  
1485       between: 492 and 492,  
1486       cost of consumption: 244  
1487 PIPELINE 493,  
1488       between: 493 and 493,  
1489       cost of consumption: 150  
1490 PIPELINE 494,  
1491       between: 494 and 494,  
1492       cost of consumption: 781  
1493 PIPELINE 495,  
1494       between: 495 and 495,  
1495       cost of consumption: 336  
1496 PIPELINE 496,  
1497       between: 496 and 496,  
1498       cost of consumption: 641  
1499 PIPELINE 497,  
1500       between: 497 and 497,  
1501       cost of consumption: 325  
1502 PIPELINE 498,  
1503       between: 498 and 498,  
1504       cost of consumption: 727  
1505 PIPELINE 499,  
1506       between: 499 and 499,  
1507       cost of consumption: 54  
1508 PIPELINE 500,  
1509       between: 500 and 500,  
1510       cost of consumption: 53  
1511 PIPELINE 501,  
1512       between: 501 and 501,  
1513       cost of consumption: 847  
1514 PIPELINE 502,  
1515       between: 502 and 502,  
1516       cost of consumption: 88  
1517 PIPELINE 503,  
1518       between: 503 and 503,  
1519       cost of consumption: 316  
1520 PIPELINE 504,  
1521       between: 504 and 504,  
1522       cost of consumption: 971  
1523 PIPELINE 505,  
1524       between: 505 and 505,  
1525       cost of consumption: 269  
1526 PIPELINE 506,  
1527       between: 506 and 506,  
1528       cost of consumption: 196  
1529 PIPELINE 507,  
1530       between: 507 and 507,  
1531       cost of consumption: 646  
1532 PTPFLTNF 508.

1533        between: 508 and 508,  
1534        cost of consumption: 943  
1535 PIPELINE 509,  
1536        between: 509 and 509,  
1537        cost of consumption: 595  
1538 PIPELINE 510,  
1539        between: 510 and 510,  
1540        cost of consumption: 517  
1541 PIPELINE 511,  
1542        between: 511 and 511,  
1543        cost of consumption: 170  
1544 PIPELINE 512,  
1545        between: 293 and 317,  
1546        cost of consumption: 59  
1547 PIPELINE 513,  
1548        between: 329 and 431,  
1549        cost of consumption: 609  
1550 PIPELINE 514,  
1551        between: 206 and 245,  
1552        cost of consumption: 281  
1553 PIPELINE 515,  
1554        between: 63 and 132,  
1555        cost of consumption: 520  
1556 PIPELINE 516,  
1557        between: 72 and 205,  
1558        cost of consumption: 203  
1559 PIPELINE 517,  
1560        between: 125 and 117,  
1561        cost of consumption: 278  
1562 PIPELINE 518,  
1563        between: 70 and 237,  
1564        cost of consumption: 120  
1565 PIPELINE 519,  
1566        between: 329 and 29,  
1567        cost of consumption: 438  
1568 PIPELINE 520,  
1569        between: 234 and 228,  
1570        cost of consumption: 432  
1571 PIPELINE 521,  
1572        between: 188 and 443,  
1573        cost of consumption: 944  
1574 PIPELINE 522,  
1575        between: 425 and 224,  
1576        cost of consumption: 445  
1577 PIPELINE 523,  
1578        between: 55 and 41,  
1579        cost of consumption: 356  
1580 PIPELINE 524,  
1581        between: 395 and 247,  
1582        cost of consumption: 882  
1583 PIPELINE 525,  
1584        between: 55 and 311,  
1585        cost of consumption: 310  
1586 PIPELINE 526,  
1587        between: 298 and 383,  
1588        cost of consumption: 163  
1589 PIPELINE 527,  
1590        between: 345 and 508,  
1591        cost of consumption: 41  
1592 PIPELINE 528,  
1593        between: 258 and 66,  
1594        cost of consumption: 966  
1595 PIPELINE 529,  
1596        between: 445 and 396,  
1597        cost of consumption: 203  
1598 PIPELINE 530,  
1599        between: 375 and 118,  
1600        cost of consumption: 984  
1601 PIPELINE 531,  
1602        between: 18 and 306,  
1603        cost of consumption: 355  
1604 PIPELINE 532,  
1605        between: 93 and 219,  
1606        cost of consumption: 323  
1607 PIPELINE 533,  
1608        between: 485 and 274,  
1609        cost of consumption: 61  
1610 PIPELINE 534,  
1611        between: 284 and 157,  
1612        cost of consumption: 780  
1613 PIPELINE 535,  
1614        between: 329 and 213,  
1615        cost of consumption: 243  
1616 PIPELINE 536,  
1617        between: 507 and 511,  
1618        cost of consumption: 595  
1619 PIPELINE 537,  
1620        between: 377 and 344,  
1621        cost of consumption: 471  
1622 PIPELINE 538,  
1623        between: 365 and 90,  
1624        cost of consumption: 274  
1625 PIPELINE 539,  
1626        between: 79 and 24,  
1627        cost of consumption: 86  
1628 PIPELINE 540,  
1629        between: 333 and 399,  
1630        cost of consumption: 172  
1631 PIPELINE 541,  
1632        between: 304 and 417,  
1633        cost of consumption: 526  
1634 PIPELINE 542,  
1635        between: 206 and 510,  
1636        cost of consumption: 609  
1637 PIPELINE 543,  
1638        between: 333 and 483,  
1639        cost of consumption: 531  
1640 PIPELINE 544,  
1641        between: 501 and 255,

1642 cost of consumption: 544  
1643 PIPELINE 545,  
1644 between: 404 and 73,  
1645 cost of consumption: 277  
1646 PIPELINE 546,  
1647 between: 107 and 68,  
1648 cost of consumption: 597  
1649 PIPELINE 547,  
1650 between: 193 and 445,  
1651 cost of consumption: 349  
1652 PIPELINE 548,  
1653 between: 275 and 299,  
1654 cost of consumption: 512  
1655 PIPELINE 549,  
1656 between: 424 and 378,  
1657 cost of consumption: 200  
1658 PIPELINE 550,  
1659 between: 457 and 199,  
1660 cost of consumption: 495  
1661 PIPELINE 551,  
1662 between: 96 and 504,  
1663 cost of consumption: 528  
1664 PIPELINE 552,  
1665 between: 41 and 198,  
1666 cost of consumption: 886  
1667 PIPELINE 553,  
1668 between: 205 and 19,  
1669 cost of consumption: 361  
1670 PIPELINE 554,  
1671 between: 131 and 8,  
1672 cost of consumption: 656  
1673 PIPELINE 555,  
1674 between: 215 and 413,  
1675 cost of consumption: 297  
1676 PIPELINE 556,  
1677 between: 511 and 8,  
1678 cost of consumption: 941  
1679 PIPELINE 557,  
1680 between: 295 and 201,  
1681 cost of consumption: 747  
1682 PIPELINE 558,  
1683 between: 424 and 476,  
1684 cost of consumption: 454  
1685 PIPELINE 559,  
1686 between: 131 and 389,  
1687 cost of consumption: 672  
1688 PIPELINE 560,  
1689 between: 374 and 334,  
1690 cost of consumption: 951  
1691 PIPELINE 561,  
1692 between: 504 and 431,  
1693 cost of consumption: 271  
1694 PIPELINE 562,  
1695 between: 27 and 472,  
1696 cost of consumption: 334  
1697 PIPELINE 563,  
1698 between: 60 and 166,  
1699 cost of consumption: 457  
1700 PIPELINE 564,  
1701 between: 64 and 297,  
1702 cost of consumption: 698  
1703 PIPELINE 565,  
1704 between: 323 and 0,  
1705 cost of consumption: 183  
1706 PIPELINE 566,  
1707 between: 144 and 0,  
1708 cost of consumption: 151  
1709 PIPELINE 567,  
1710 between: 32 and 295,  
1711 cost of consumption: 544  
1712 PIPELINE 568,  
1713 between: 366 and 207,  
1714 cost of consumption: 828  
1715 PIPELINE 569,  
1716 between: 487 and 338,  
1717 cost of consumption: 273  
1718 PIPELINE 570,  
1719 between: 474 and 200,  
1720 cost of consumption: 312  
1721 PIPELINE 571,  
1722 between: 149 and 192,  
1723 cost of consumption: 111  
1724 PIPELINE 572,  
1725 between: 327 and 219,  
1726 cost of consumption: 543  
1727 PIPELINE 573,  
1728 between: 192 and 279,  
1729 cost of consumption: 565  
1730 PIPELINE 574,  
1731 between: 77 and 343,  
1732 cost of consumption: 351  
1733 PIPELINE 575,  
1734 between: 482 and 155,  
1735 cost of consumption: 791  
1736 PIPELINE 576,  
1737 between: 276 and 299,  
1738 cost of consumption: 159  
1739 PIPELINE 577,  
1740 between: 78 and 331,  
1741 cost of consumption: 47  
1742 PIPELINE 578,  
1743 between: 81 and 186,  
1744 cost of consumption: 150  
1745 PIPELINE 579,  
1746 between: 48 and 161,  
1747 cost of consumption: 329  
1748 PIPELINE 580,  
1749 between: 405 and 124,  
1750 cost of consumption: 425

1751 PIPELINE 501,  
1752     between: 72 and 273,  
1753     cost of consumption: 634  
1754 PIPELINE 582,  
1755     between: 170 and 88,  
1756     cost of consumption: 125  
1757 PIPELINE 583,  
1758     between: 228 and 281,  
1759     cost of consumption: 485  
1760 PIPELINE 584,  
1761     between: 453 and 358,  
1762     cost of consumption: 716  
1763 PIPELINE 585,  
1764     between: 463 and 328,  
1765     cost of consumption: 471  
1766 PIPELINE 586,  
1767     between: 473 and 92,  
1768     cost of consumption: 746  
1769 PIPELINE 587,  
1770     between: 484 and 170,  
1771     cost of consumption: 774  
1772 PIPELINE 588,  
1773     between: 278 and 251,  
1774     cost of consumption: 648  
1775 PIPELINE 589,  
1776     between: 279 and 299,  
1777     cost of consumption: 521  
1778 PIPELINE 590,  
1779     between: 107 and 192,  
1780     cost of consumption: 61  
1781 PIPELINE 591,  
1782     between: 136 and 264,  
1783     cost of consumption: 214  
1784 PIPELINE 592,  
1785     between: 357 and 434,  
1786     cost of consumption: 951  
1787 PIPELINE 593,  
1788     between: 285 and 151,  
1789     cost of consumption: 952  
1790 PIPELINE 594,  
1791     between: 493 and 92,  
1792     cost of consumption: 318  
1793 PIPELINE 595,  
1794     between: 21 and 43,  
1795     cost of consumption: 446  
1796 PIPELINE 596,  
1797     between: 215 and 4,  
1798     cost of consumption: 162  
1799 PIPELINE 597,  
1800     between: 197 and 488,  
1801     cost of consumption: 668  
1802 PIPELINE 598,  
1803     between: 510 and 254,  
1804     cost of consumption: 799  
1805 PIPELINE 599,  
1806     between: 497 and 22,  
1807     cost of consumption: 730  
1808 PIPELINE 600,  
1809     between: 133 and 129,  
1810     cost of consumption: 435  
1811 PIPELINE 601,  
1812     between: 406 and 265,  
1813     cost of consumption: 515  
1814 PIPELINE 602,  
1815     between: 439 and 110,  
1816     cost of consumption: 430  
1817 PIPELINE 603,  
1818     between: 49 and 396,  
1819     cost of consumption: 421  
1820 PIPELINE 604,  
1821     between: 452 and 377,  
1822     cost of consumption: 697  
1823 PIPELINE 605,  
1824     between: 189 and 398,  
1825     cost of consumption: 604  
1826 PIPELINE 606,  
1827     between: 254 and 102,  
1828     cost of consumption: 928  
1829 PIPELINE 607,  
1830     between: 411 and 299,  
1831     cost of consumption: 177  
1832 PIPELINE 608,  
1833     between: 226 and 297,  
1834     cost of consumption: 391  
1835 PIPELINE 609,  
1836     between: 292 and 282,  
1837     cost of consumption: 717  
1838 PIPELINE 610,  
1839     between: 146 and 415,  
1840     cost of consumption: 183  
1841 PIPELINE 611,  
1842     between: 192 and 309,  
1843     cost of consumption: 856  
1844 PIPELINE 612,  
1845     between: 502 and 237,  
1846     cost of consumption: 719  
1847 PIPELINE 613,  
1848     between: 223 and 286,  
1849     cost of consumption: 595  
1850 PIPELINE 614,  
1851     between: 95 and 227,  
1852     cost of consumption: 612  
1853 PIPELINE 615,  
1854     between: 59 and 416,  
1855     cost of consumption: 187  
1856 PIPELINE 616,  
1857     between: 66 and 159,  
1858     cost of consumption: 433  
1859 PIPELINE 617,  
1860     between: 78 and 58,

1861 cost of consumption: 444  
1862 PIPELINE 618,  
1863 between: 66 and 285,  
1864 cost of consumption: 989  
1865 PIPELINE 619,  
1866 between: 308 and 65,  
1867 cost of consumption: 711  
1868 PIPELINE 620,  
1869 between: 61 and 211,  
1870 cost of consumption: 182  
1871 PIPELINE 621,  
1872 between: 455 and 403,  
1873 cost of consumption: 404  
1874 PIPELINE 622,  
1875 between: 90 and 394,  
1876 cost of consumption: 993  
1877 PIPELINE 623,  
1878 between: 348 and 105,  
1879 cost of consumption: 543  
1880 PIPELINE 624,  
1881 between: 490 and 201,  
1882 cost of consumption: 354  
1883 PIPELINE 625,  
1884 between: 498 and 260,  
1885 cost of consumption: 387  
1886 PIPELINE 626,  
1887 between: 392 and 327,  
1888 cost of consumption: 786  
1889 PIPELINE 627,  
1890 between: 388 and 405,  
1891 cost of consumption: 356  
1892 PIPELINE 628,  
1893 between: 171 and 471,  
1894 cost of consumption: 465  
1895 PIPELINE 629,  
1896 between: 251 and 267,  
1897 cost of consumption: 203  
1898 PIPELINE 630,  
1899 between: 101 and 328,  
1900 cost of consumption: 350  
1901 PIPELINE 631,  
1902 between: 366 and 271,  
1903 cost of consumption: 986  
1904 PIPELINE 632,  
1905 between: 429 and 362,  
1906 cost of consumption: 620  
1907 PIPELINE 633,  
1908 between: 217 and 198,  
1909 cost of consumption: 29  
1910 PIPELINE 634,  
1911 between: 292 and 177,  
1912 cost of consumption: 982  
1913 PIPELINE 635,  
1914 between: 81 and 163,  
1915 cost of consumption: 171  
1916 PIPELINE 636,  
1917 between: 287 and 43,  
1918 cost of consumption: 546  
1919 PIPELINE 637,  
1920 between: 140 and 431,  
1921 cost of consumption: 31  
1922 PIPELINE 638,  
1923 between: 52 and 90,  
1924 cost of consumption: 502  
1925 PIPELINE 639,  
1926 between: 248 and 341,  
1927 cost of consumption: 993  
1928 PIPELINE 640,  
1929 between: 510 and 442,  
1930 cost of consumption: 922  
1931 PIPELINE 641,  
1932 between: 472 and 296,  
1933 cost of consumption: 817  
1934 PIPELINE 642,  
1935 between: 325 and 214,  
1936 cost of consumption: 827  
1937 PIPELINE 643,  
1938 between: 60 and 431,  
1939 cost of consumption: 370  
1940 PIPELINE 644,  
1941 between: 412 and 211,  
1942 cost of consumption: 35  
1943 PIPELINE 645,  
1944 between: 454 and 293,  
1945 cost of consumption: 782  
1946 PIPELINE 646,  
1947 between: 244 and 68,  
1948 cost of consumption: 793  
1949 PIPELINE 647,  
1950 between: 361 and 209,  
1951 cost of consumption: 848  
1952 PIPELINE 648,  
1953 between: 371 and 261,  
1954 cost of consumption: 738  
1955 PIPELINE 649,  
1956 between: 340 and 509,  
1957 cost of consumption: 447  
1958 PIPELINE 650,  
1959 between: 64 and 508,  
1960 cost of consumption: 681  
1961 PIPELINE 651,  
1962 between: 117 and 468,  
1963 cost of consumption: 969  
1964 PIPELINE 652,  
1965 between: 442 and 281,  
1966 cost of consumption: 63  
1967 PIPELINE 653,  
1968 between: 104 and 341,  
1969 cost of consumption: 303

1970 PIPELINE 654,  
1971      between: 477 and 241,  
1972      cost of consumption: 874  
1973 PIPELINE 655,  
1974      between: 3 and 183,  
1975      cost of consumption: 831  
1976 PIPELINE 656,  
1977      between: 204 and 427,  
1978      cost of consumption: 204  
1979 PIPELINE 657,  
1980      between: 448 and 276,  
1981      cost of consumption: 477  
1982 PIPELINE 658,  
1983      between: 99 and 135,  
1984      cost of consumption: 650  
1985 PIPELINE 659,  
1986      between: 352 and 475,  
1987      cost of consumption: 887  
1988 PIPELINE 660,  
1989      between: 434 and 28,  
1990      cost of consumption: 387  
1991 PIPELINE 661,  
1992      between: 446 and 145,  
1993      cost of consumption: 495  
1994 PIPELINE 662,  
1995      between: 243 and 75,  
1996      cost of consumption: 544  
1997 PIPELINE 663,  
1998      between: 253 and 180,  
1999      cost of consumption: 797  
2000 PIPELINE 664,  
2001      between: 183 and 145,  
2002      cost of consumption: 983  
2003 PIPELINE 665,  
2004      between: 325 and 149,  
2005      cost of consumption: 78  
2006 PIPELINE 666,  
2007      between: 247 and 353,  
2008      cost of consumption: 602  
2009 PIPELINE 667,  
2010      between: 238 and 290,  
2011      cost of consumption: 446  
2012 PIPELINE 668,  
2013      between: 438 and 389,  
2014      cost of consumption: 990  
2015 PIPELINE 669,  
2016      between: 387 and 230,  
2017      cost of consumption: 729  
2018 PIPELINE 670,  
2019      between: 334 and 152,  
2020      cost of consumption: 653  
2021 PIPELINE 671,  
2022      between: 276 and 87,  
2023      cost of consumption: 31  
2024 PIPELINE 672,  
2025      between: 175 and 330,  
2026      cost of consumption: 26  
2027 PIPELINE 673,  
2028      between: 354 and 71,  
2029      cost of consumption: 462  
2030 PIPELINE 674,  
2031      between: 363 and 255,  
2032      cost of consumption: 408  
2033 PIPELINE 675,  
2034      between: 101 and 68,  
2035      cost of consumption: 541  
2036 PIPELINE 676,  
2037      between: 22 and 315,  
2038      cost of consumption: 990  
2039 PIPELINE 677,  
2040      between: 371 and 42,  
2041      cost of consumption: 544  
2042 PIPELINE 678,  
2043      between: 485 and 480,  
2044      cost of consumption: 750  
2045 PIPELINE 679,  
2046      between: 222 and 356,  
2047      cost of consumption: 340  
2048 PIPELINE 680,  
2049      between: 434 and 178,  
2050      cost of consumption: 404  
2051 PIPELINE 681,  
2052      between: 163 and 454,  
2053      cost of consumption: 323  
2054 PIPELINE 682,  
2055      between: 37 and 117,  
2056      cost of consumption: 61  
2057 PIPELINE 683,  
2058      between: 498 and 472,  
2059      cost of consumption: 29  
2060 PIPELINE 684,  
2061      between: 116 and 323,  
2062      cost of consumption: 524  
2063 PIPELINE 685,  
2064      between: 391 and 424,  
2065      cost of consumption: 120  
2066 PIPELINE 686,  
2067      between: 303 and 446,  
2068      cost of consumption: 643  
2069 PIPELINE 687,  
2070      between: 56 and 306,  
2071      cost of consumption: 645  
2072 PIPELINE 688,  
2073      between: 100 and 279,  
2074      cost of consumption: 246  
2075 PIPELINE 689,  
2076      between: 21 and 501,  
2077      cost of consumption: 794  
2078 PIPELINE 690,  
2079      between: 172 and 423,

2080 cost of consumption: 524  
2081 PIPELINE 691,  
2082 between: 475 and 74,  
2083 cost of consumption: 170  
2084 PIPELINE 692,  
2085 between: 354 and 111,  
2086 cost of consumption: 872  
2087 PIPELINE 693,  
2088 between: 50 and 98,  
2089 cost of consumption: 520  
2090 PIPELINE 694,  
2091 between: 330 and 214,  
2092 cost of consumption: 907  
2093 PIPELINE 695,  
2094 between: 353 and 93,  
2095 cost of consumption: 715  
2096 PIPELINE 696,  
2097 between: 444 and 396,  
2098 cost of consumption: 665  
2099 PIPELINE 697,  
2100 between: 339 and 452,  
2101 cost of consumption: 355  
2102 PIPELINE 698,  
2103 between: 275 and 40,  
2104 cost of consumption: 930  
2105 PIPELINE 699,  
2106 between: 180 and 61,  
2107 cost of consumption: 375  
2108 PIPELINE 700,  
2109 between: 441 and 233,  
2110 cost of consumption: 63  
2111 PIPELINE 701,  
2112 between: 368 and 197,  
2113 cost of consumption: 345  
2114 PIPELINE 702,  
2115 between: 238 and 39,  
2116 cost of consumption: 545  
2117 PIPELINE 703,  
2118 between: 225 and 89,  
2119 cost of consumption: 739  
2120 PIPELINE 704,  
2121 between: 172 and 420,  
2122 cost of consumption: 33  
2123 PIPELINE 705,  
2124 between: 442 and 261,  
2125 cost of consumption: 830  
2126 PIPELINE 706,  
2127 between: 112 and 194,  
2128 cost of consumption: 666  
2129 PIPELINE 707,  
2130 between: 228 and 21,  
2131 cost of consumption: 878  
2132 PIPELINE 708,  
2133 between: 139 and 296,  
2134 cost of consumption: 359  
2135 PIPELINE 709,  
2136 between: 328 and 477,  
2137 cost of consumption: 500  
2138 PIPELINE 710,  
2139 between: 507 and 406,  
2140 cost of consumption: 638  
2141 PIPELINE 711,  
2142 between: 85 and 263,  
2143 cost of consumption: 227  
2144 PIPELINE 712,  
2145 between: 249 and 501,  
2146 cost of consumption: 530  
2147 PIPELINE 713,  
2148 between: 13 and 214,  
2149 cost of consumption: 659  
2150 PIPELINE 714,  
2151 between: 387 and 386,  
2152 cost of consumption: 935  
2153 PIPELINE 715,  
2154 between: 463 and 316,  
2155 cost of consumption: 581  
2156 PIPELINE 716,  
2157 between: 120 and 428,  
2158 cost of consumption: 63  
2159 PIPELINE 717,  
2160 between: 173 and 144,  
2161 cost of consumption: 20  
2162 PIPELINE 718,  
2163 between: 167 and 283,  
2164 cost of consumption: 92  
2165 PIPELINE 719,  
2166 between: 201 and 100,  
2167 cost of consumption: 873  
2168 PIPELINE 720,  
2169 between: 296 and 95,  
2170 cost of consumption: 856  
2171 PIPELINE 721,  
2172 between: 113 and 180,  
2173 cost of consumption: 207  
2174 PIPELINE 722,  
2175 between: 127 and 429,  
2176 cost of consumption: 444  
2177 PIPELINE 723,  
2178 between: 180 and 443,  
2179 cost of consumption: 786  
2180 PIPELINE 724,  
2181 between: 323 and 318,  
2182 cost of consumption: 44  
2183 PIPELINE 725,  
2184 between: 373 and 270,  
2185 cost of consumption: 176  
2186 PIPELINE 726,  
2187 between: 173 and 390,  
2188 cost of consumption: 540  
-----

2189 PIPELINE 727,  
2190     between: 167 and 52,  
2191     cost of consumption: 796  
2192 PIPELINE 728,  
2193     between: 182 and 219,  
2194     cost of consumption: 648  
2195 PIPELINE 729,  
2196     between: 494 and 420,  
2197     cost of consumption: 20  
2198 PIPELINE 730,  
2199     between: 258 and 204,  
2200     cost of consumption: 283  
2201 PIPELINE 731,  
2202     between: 429 and 318,  
2203     cost of consumption: 847  
2204 PIPELINE 732,  
2205     between: 351 and 445,  
2206     cost of consumption: 700  
2207 PIPELINE 733,  
2208     between: 262 and 114,  
2209     cost of consumption: 87  
2210 PIPELINE 734,  
2211     between: 387 and 437,  
2212     cost of consumption: 94  
2213 PIPELINE 735,  
2214     between: 386 and 298,  
2215     cost of consumption: 44  
2216 PIPELINE 736,  
2217     between: 189 and 472,  
2218     cost of consumption: 114  
2219 PIPELINE 737,  
2220     between: 420 and 127,  
2221     cost of consumption: 318  
2222 PIPELINE 738,  
2223     between: 284 and 310,  
2224     cost of consumption: 233  
2225 PIPELINE 739,  
2226     between: 431 and 292,  
2227     cost of consumption: 509  
2228 PIPELINE 740,  
2229     between: 166 and 38,  
2230     cost of consumption: 698  
2231 PIPELINE 741,  
2232     between: 508 and 468,  
2233     cost of consumption: 728  
2234 PIPELINE 742,  
2235     between: 6 and 307,  
2236     cost of consumption: 877  
2237 PIPELINE 743,  
2238     between: 445 and 58,  
2239     cost of consumption: 319  
2240 PIPELINE 744,  
2241     between: 304 and 445,  
2242     cost of consumption: 708  
2243 PIPELINE 745,  
2244     between: 481 and 320,  
2245     cost of consumption: 31  
2246 PIPELINE 746,  
2247     between: 416 and 509,  
2248     cost of consumption: 511  
2249 PIPELINE 747,  
2250     between: 229 and 418,  
2251     cost of consumption: 910  
2252 PIPELINE 748,  
2253     between: 95 and 190,  
2254     cost of consumption: 540  
2255 PIPELINE 749,  
2256     between: 179 and 109,  
2257     cost of consumption: 544  
2258 PIPELINE 750,  
2259     between: 172 and 275,  
2260     cost of consumption: 87  
2261 PIPELINE 751,  
2262     between: 369 and 271,  
2263     cost of consumption: 75  
2264 PIPELINE 752,  
2265     between: 372 and 277,  
2266     cost of consumption: 6  
2267 PIPELINE 753,  
2268     between: 308 and 210,  
2269     cost of consumption: 24  
2270 PIPELINE 754,  
2271     between: 359 and 2,  
2272     cost of consumption: 558  
2273 PIPELINE 755,  
2274     between: 334 and 483,  
2275     cost of consumption: 702  
2276 PIPELINE 756,  
2277     between: 96 and 387,  
2278     cost of consumption: 275  
2279 PIPELINE 757,  
2280     between: 330 and 105,  
2281     cost of consumption: 813  
2282 PIPELINE 758,  
2283     between: 180 and 200,  
2284     cost of consumption: 107  
2285 PIPELINE 759,  
2286     between: 339 and 379,  
2287     cost of consumption: 152  
2288 PIPELINE 760,  
2289     between: 279 and 39,  
2290     cost of consumption: 611  
2291 PIPELINE 761,  
2292     between: 257 and 408,  
2293     cost of consumption: 466  
2294 PIPELINE 762,  
2295     between: 191 and 268,  
2296     cost of consumption: 207  
2297 PIPELINE 763,  
2298     between: 432 and 65

2299        between: 452 and 55,  
2300        cost of consumption: 530  
2301        PIPELINE 764,  
2302            between: 220 and 424,  
2303            cost of consumption: 572  
2304        PIPELINE 765,  
2305            between: 453 and 246,  
2306            cost of consumption: 720  
2307        PIPELINE 766,  
2308            between: 494 and 343,  
2309            cost of consumption: 363  
2310        PIPELINE 767,  
2311            between: 20 and 161,  
2312            cost of consumption: 964  
2313        PIPELINE 768,  
2314            between: 477 and 341,  
2315            cost of consumption: 484  
2316        PIPELINE 769,  
2317            between: 99 and 169,  
2318            cost of consumption: 152  
2319        PIPELINE 770,  
2320            between: 343 and 448,  
2321            cost of consumption: 527  
2322        PIPELINE 771,  
2323            between: 349 and 193,  
2324            cost of consumption: 952  
2325        PIPELINE 772,  
2326            between: 115 and 384,  
2327            cost of consumption: 500  
2328        PIPELINE 773,  
2329            between: 157 and 304,  
2330            cost of consumption: 45  
2331        PIPELINE 774,  
2332            between: 410 and 12,  
2333            cost of consumption: 253  
2334        PIPELINE 775,  
2335            between: 154 and 465,  
2336            cost of consumption: 828  
2337        PIPELINE 776,  
2338            between: 381 and 447,  
2339            cost of consumption: 147  
2340        PIPELINE 777,  
2341            between: 483 and 468,  
2342            cost of consumption: 716  
2343        PIPELINE 778,  
2344            between: 179 and 433,  
2345            cost of consumption: 146  
2346        PIPELINE 779,  
2347            between: 74 and 20,  
2348            cost of consumption: 971  
2349        PIPELINE 780,  
2350            between: 349 and 363,  
2351            cost of consumption: 731  
2352        PIPELINE 781,  
2353            between: 152 and 201,  
2354            cost of consumption: 860  
2355        PIPELINE 782,  
2356            between: 363 and 316,  
2357            cost of consumption: 428  
2358        PIPELINE 783,  
2359            between: 330 and 473,  
2360            cost of consumption: 788  
2361        PIPELINE 784,  
2362            between: 363 and 372,  
2363            cost of consumption: 609  
2364        PIPELINE 785,  
2365            between: 307 and 14,  
2366            cost of consumption: 794  
2367        PIPELINE 786,  
2368            between: 498 and 395,  
2369            cost of consumption: 394  
2370        PIPELINE 787,  
2371            between: 8 and 366,  
2372            cost of consumption: 30  
2373        PIPELINE 788,  
2374            between: 192 and 33,  
2375            cost of consumption: 159  
2376        PIPELINE 789,  
2377            between: 205 and 108,  
2378            cost of consumption: 883  
2379        PIPELINE 790,  
2380            between: 387 and 457,  
2381            cost of consumption: 55  
2382        PIPELINE 791,  
2383            between: 505 and 97,  
2384            cost of consumption: 280  
2385        PIPELINE 792,  
2386            between: 304 and 460,  
2387            cost of consumption: 20  
2388        PIPELINE 793,  
2389            between: 487 and 279,  
2390            cost of consumption: 829  
2391        PIPELINE 794,  
2392            between: 462 and 130,  
2393            cost of consumption: 233  
2394        PIPELINE 795,  
2395            between: 450 and 437,  
2396            cost of consumption: 151  
2397        PIPELINE 796,  
2398            between: 392 and 424,  
2399            cost of consumption: 650  
2400        PIPELINE 797,  
2401            between: 269 and 432,  
2402            cost of consumption: 737  
2403        PIPELINE 798,  
2404            between: 102 and 112,  
2405            cost of consumption: 74  
2406        PIPELINE 799,  
2407            between: 368 and 317,  
                cost of consumption: 790

2408 PIPELINE 800,  
2409     between: 142 and 192,  
2410     cost of consumption: 736  
2411 PIPELINE 801,  
2412     between: 280 and 185,  
2413     cost of consumption: 81  
2414 PIPELINE 802,  
2415     between: 107 and 489,  
2416     cost of consumption: 478  
2417 PIPELINE 803,  
2418     between: 250 and 464,  
2419     cost of consumption: 773  
2420 PIPELINE 804,  
2421     between: 355 and 415,  
2422     cost of consumption: 655  
2423 PIPELINE 805,  
2424     between: 319 and 353,  
2425     cost of consumption: 724  
2426 PIPELINE 806,  
2427     between: 298 and 233,  
2428     cost of consumption: 804  
2429 PIPELINE 807,  
2430     between: 159 and 502,  
2431     cost of consumption: 389  
2432 PIPELINE 808,  
2433     between: 387 and 92,  
2434     cost of consumption: 189  
2435 PIPELINE 809,  
2436     between: 137 and 460,  
2437     cost of consumption: 51  
2438 PIPELINE 810,  
2439     between: 506 and 91,  
2440     cost of consumption: 939  
2441 PIPELINE 811,  
2442     between: 309 and 371,  
2443     cost of consumption: 581  
2444 PIPELINE 812,  
2445     between: 210 and 479,  
2446     cost of consumption: 534  
2447 PIPELINE 813,  
2448     between: 59 and 217,  
2449     cost of consumption: 223  
2450 PIPELINE 814,  
2451     between: 187 and 60,  
2452     cost of consumption: 430  
2453 PIPELINE 815,  
2454     between: 445 and 380,  
2455     cost of consumption: 111  
2456 PIPELINE 816,  
2457     between: 116 and 166,  
2458     cost of consumption: 409  
2459 PIPELINE 817,  
2460     between: 212 and 325,  
2461     cost of consumption: 63  
2462 PIPELINE 818,  
2463     between: 228 and 201,  
2464     cost of consumption: 748  
2465 PIPELINE 819,  
2466     between: 356 and 338,  
2467     cost of consumption: 968  
2468 PIPELINE 820,  
2469     between: 290 and 332,  
2470     cost of consumption: 955  
2471 PIPELINE 821,  
2472     between: 417 and 130,  
2473     cost of consumption: 111  
2474 PIPELINE 822,  
2475     between: 217 and 340,  
2476     cost of consumption: 358  
2477 PIPELINE 823,  
2478     between: 506 and 399,  
2479     cost of consumption: 415  
2480 PIPELINE 824,  
2481     between: 236 and 74,  
2482     cost of consumption: 756  
2483 PIPELINE 825,  
2484     between: 381 and 7,  
2485     cost of consumption: 960  
2486 PIPELINE 826,  
2487     between: 368 and 123,  
2488     cost of consumption: 526  
2489 PIPELINE 827,  
2490     between: 76 and 335,  
2491     cost of consumption: 99  
2492 PIPELINE 828,  
2493     between: 286 and 51,  
2494     cost of consumption: 412  
2495 PIPELINE 829,  
2496     between: 77 and 408,  
2497     cost of consumption: 238  
2498 PIPELINE 830,  
2499     between: 329 and 186,  
2500     cost of consumption: 363  
2501 PIPELINE 831,  
2502     between: 159 and 91,  
2503     cost of consumption: 869  
2504 PIPELINE 832,  
2505     between: 361 and 308,  
2506     cost of consumption: 185  
2507 PIPELINE 833,  
2508     between: 18 and 303,  
2509     cost of consumption: 784  
2510 PIPELINE 834,  
2511     between: 405 and 27,  
2512     cost of consumption: 786  
2513 PIPELINE 835,  
2514     between: 340 and 409,  
2515     cost of consumption: 841  
2516 PIPELINE 836,  
2517     between: 113 and 265

2517        between: 145 and 203,  
2518        cost of consumption: 316  
2519        PIPELINE 837,  
2520            between: 112 and 341,  
2521            cost of consumption: 716  
2522        PIPELINE 838,  
2523            between: 406 and 115,  
2524            cost of consumption: 71  
2525        PIPELINE 839,  
2526            between: 390 and 193,  
2527            cost of consumption: 271  
2528        PIPELINE 840,  
2529            between: 199 and 10,  
2530            cost of consumption: 10  
2531        PIPELINE 841,  
2532            between: 341 and 169,  
2533            cost of consumption: 925  
2534        PIPELINE 842,  
2535            between: 101 and 19,  
2536            cost of consumption: 594  
2537        PIPELINE 843,  
2538            between: 201 and 37,  
2539            cost of consumption: 897  
2540        PIPELINE 844,  
2541            between: 188 and 442,  
2542            cost of consumption: 52  
2543        PIPELINE 845,  
2544            between: 249 and 270,  
2545            cost of consumption: 837  
2546        PIPELINE 846,  
2547            between: 317 and 413,  
2548            cost of consumption: 710  
2549        PIPELINE 847,  
2550            between: 509 and 13,  
2551            cost of consumption: 427  
2552        PIPELINE 848,  
2553            between: 12 and 420,  
2554            cost of consumption: 47  
2555        PIPELINE 849,  
2556            between: 78 and 298,  
2557            cost of consumption: 960  
2558        PIPELINE 850,  
2559            between: 41 and 497,  
2560            cost of consumption: 186  
2561        PIPELINE 851,  
2562            between: 190 and 327,  
2563            cost of consumption: 971  
2564        PIPELINE 852,  
2565            between: 430 and 428,  
2566            cost of consumption: 774  
2567        PIPELINE 853,  
2568            between: 467 and 118,  
2569            cost of consumption: 948  
2570        PIPELINE 854,  
2571            between: 295 and 306,  
2572            cost of consumption: 254  
2573        PIPELINE 855,  
2574            between: 151 and 44,  
2575            cost of consumption: 445  
2576        PIPELINE 856,  
2577            between: 415 and 361,  
2578            cost of consumption: 122  
2579        PIPELINE 857,  
2580            between: 433 and 358,  
2581            cost of consumption: 512  
2582        PIPELINE 858,  
2583            between: 279 and 370,  
2584            cost of consumption: 356  
2585        PIPELINE 859,  
2586            between: 241 and 449,  
2587            cost of consumption: 414  
2588        PIPELINE 860,  
2589            between: 396 and 490,  
2590            cost of consumption: 919  
2591        PIPELINE 861,  
2592            between: 49 and 168,  
2593            cost of consumption: 582  
2594        PIPELINE 862,  
2595            between: 384 and 86,  
2596            cost of consumption: 267  
2597        PIPELINE 863,  
2598            between: 225 and 42,  
2599            cost of consumption: 857  
2600        PIPELINE 864,  
2601            between: 104 and 337,  
2602            cost of consumption: 131  
2603        PIPELINE 865,  
2604            between: 426 and 488,  
2605            cost of consumption: 871  
2606        PIPELINE 866,  
2607            between: 506 and 392,  
2608            cost of consumption: 265  
2609        PIPELINE 867,  
2610            between: 487 and 313,  
2611            cost of consumption: 975  
2612        PIPELINE 868,  
2613            between: 482 and 80,  
2614            cost of consumption: 714  
2615        PIPELINE 869,  
2616            between: 385 and 322,  
2617            cost of consumption: 547  
2618        PIPELINE 870,  
2619            between: 74 and 206,  
2620            cost of consumption: 93  
2621        PIPELINE 871,  
2622            between: 261 and 256,  
2623            cost of consumption: 357  
2624        PIPELINE 872,  
2625            between: 262 and 128,  
2626            cost of consumption: 259

2627 PIPELINE 873,  
2628     between: 180 and 353,  
2629     cost of consumption: 741  
2630 PIPELINE 874,  
2631     between: 216 and 458,  
2632     cost of consumption: 343  
2633 PIPELINE 875,  
2634     between: 47 and 372,  
2635     cost of consumption: 815  
2636 PIPELINE 876,  
2637     between: 433 and 366,  
2638     cost of consumption: 287  
2639 PIPELINE 877,  
2640     between: 157 and 341,  
2641     cost of consumption: 520  
2642 PIPELINE 878,  
2643     between: 240 and 312,  
2644     cost of consumption: 585  
2645 PIPELINE 879,  
2646     between: 181 and 185,  
2647     cost of consumption: 875  
2648 PIPELINE 880,  
2649     between: 59 and 260,  
2650     cost of consumption: 697  
2651 PIPELINE 881,  
2652     between: 427 and 9,  
2653     cost of consumption: 233  
2654 PIPELINE 882,  
2655     between: 451 and 271,  
2656     cost of consumption: 449  
2657 PIPELINE 883,  
2658     between: 49 and 452,  
2659     cost of consumption: 115  
2660 PIPELINE 884,  
2661     between: 202 and 156,  
2662     cost of consumption: 525  
2663 PIPELINE 885,  
2664     between: 180 and 203,  
2665     cost of consumption: 929  
2666 PIPELINE 886,  
2667     between: 134 and 125,  
2668     cost of consumption: 767  
2669 PIPELINE 887,  
2670     between: 481 and 282,  
2671     cost of consumption: 156  
2672 PIPELINE 888,  
2673     between: 116 and 10,  
2674     cost of consumption: 308  
2675 PIPELINE 889,  
2676     between: 344 and 191,  
2677     cost of consumption: 574  
2678 PIPELINE 890,  
2679     between: 382 and 250,  
2680     cost of consumption: 362  
2681 PIPELINE 891,  
2682     between: 115 and 165,  
2683     cost of consumption: 939  
2684 PIPELINE 892,  
2685     between: 103 and 104,  
2686     cost of consumption: 530  
2687 PIPELINE 893,  
2688     between: 220 and 154,  
2689     cost of consumption: 454  
2690 PIPELINE 894,  
2691     between: 178 and 356,  
2692     cost of consumption: 211  
2693 PIPELINE 895,  
2694     between: 82 and 24,  
2695     cost of consumption: 278  
2696 PIPELINE 896,  
2697     between: 358 and 158,  
2698     cost of consumption: 171  
2699 PIPELINE 897,  
2700     between: 488 and 127,  
2701     cost of consumption: 206  
2702 PIPELINE 898,  
2703     between: 447 and 244,  
2704     cost of consumption: 1000  
2705 PIPELINE 899,  
2706     between: 207 and 76,  
2707     cost of consumption: 616  
2708 PIPELINE 900,  
2709     between: 152 and 459,  
2710     cost of consumption: 594  
2711 PIPELINE 901,  
2712     between: 357 and 62,  
2713     cost of consumption: 728  
2714 PIPELINE 902,  
2715     between: 59 and 165,  
2716     cost of consumption: 16  
2717 PIPELINE 903,  
2718     between: 32 and 385,  
2719     cost of consumption: 418  
2720 PIPELINE 904,  
2721     between: 458 and 51,  
2722     cost of consumption: 670  
2723 PIPELINE 905,  
2724     between: 16 and 133,  
2725     cost of consumption: 462  
2726 PIPELINE 906,  
2727     between: 289 and 491,  
2728     cost of consumption: 605  
2729 PIPELINE 907,  
2730     between: 176 and 467,  
2731     cost of consumption: 732  
2732 PIPELINE 908,  
2733     between: 345 and 403,  
2734     cost of consumption: 712  
2735 PIPELINE 909,

2736        between: 12 and 98,  
2737        cost of consumption: 773  
2738 PIPELINE 910,  
2739        between: 383 and 250,  
2740        cost of consumption: 488  
2741 PIPELINE 911,  
2742        between: 493 and 95,  
2743        cost of consumption: 254  
2744 PIPELINE 912,  
2745        between: 256 and 154,  
2746        cost of consumption: 595  
2747 PIPELINE 913,  
2748        between: 123 and 186,  
2749        cost of consumption: 13  
2750 PIPELINE 914,  
2751        between: 145 and 132,  
2752        cost of consumption: 616  
2753 PIPELINE 915,  
2754        between: 10 and 148,  
2755        cost of consumption: 926  
2756 PIPELINE 916,  
2757        between: 412 and 438,  
2758        cost of consumption: 865  
2759 PIPELINE 917,  
2760        between: 460 and 102,  
2761        cost of consumption: 549  
2762 PIPELINE 918,  
2763        between: 123 and 447,  
2764        cost of consumption: 480  
2765 PIPELINE 919,  
2766        between: 31 and 459,  
2767        cost of consumption: 610  
2768 PIPELINE 920,  
2769        between: 15 and 331,  
2770        cost of consumption: 212  
2771 PIPELINE 921,  
2772        between: 458 and 312,  
2773        cost of consumption: 643  
2774 PIPELINE 922,  
2775        between: 451 and 56,  
2776        cost of consumption: 837  
2777 PIPELINE 923,  
2778        between: 97 and 179,  
2779        cost of consumption: 671  
2780 PIPELINE 924,  
2781        between: 129 and 324,  
2782        cost of consumption: 948  
2783 PIPELINE 925,  
2784        between: 213 and 335,  
2785        cost of consumption: 872  
2786 PIPELINE 926,  
2787        between: 430 and 235,  
2788        cost of consumption: 718  
2789 PIPELINE 927,  
2790        between: 114 and 183,  
2791        cost of consumption: 356  
2792 PIPELINE 928,  
2793        between: 266 and 306,  
2794        cost of consumption: 987  
2795 PIPELINE 929,  
2796        between: 309 and 337,  
2797        cost of consumption: 959  
2798 PIPELINE 930,  
2799        between: 450 and 352,  
2800        cost of consumption: 530  
2801 PIPELINE 931,  
2802        between: 329 and 298,  
2803        cost of consumption: 346  
2804 PIPELINE 932,  
2805        between: 303 and 237,  
2806        cost of consumption: 426  
2807 PIPELINE 933,  
2808        between: 431 and 335,  
2809        cost of consumption: 485  
2810 PIPELINE 934,  
2811        between: 234 and 464,  
2812        cost of consumption: 938  
2813 PIPELINE 935,  
2814        between: 169 and 165,  
2815        cost of consumption: 801  
2816 PIPELINE 936,  
2817        between: 252 and 83,  
2818        cost of consumption: 180  
2819 PIPELINE 937,  
2820        between: 262 and 198,  
2821        cost of consumption: 27  
2822 PIPELINE 938,  
2823        between: 373 and 464,  
2824        cost of consumption: 421  
2825 PIPELINE 939,  
2826        between: 420 and 262,  
2827        cost of consumption: 71  
2828 PIPELINE 940,  
2829        between: 414 and 200,  
2830        cost of consumption: 95  
2831 PIPELINE 941,  
2832        between: 227 and 18,  
2833        cost of consumption: 978  
2834 PIPELINE 942,  
2835        between: 352 and 321,  
2836        cost of consumption: 967  
2837 PIPELINE 943,  
2838        between: 21 and 241,  
2839        cost of consumption: 6  
2840 PIPELINE 944,  
2841        between: 381 and 475,  
2842        cost of consumption: 455  
2843 PIPELINE 945,  
2844        between: 42 and 132,  
2845        cost of consumption: 924

--  
2846 PIPELINE 946,  
2847     between: 38 and 384,  
2848     cost of consumption: 688  
2849 PIPELINE 947,  
2850     between: 269 and 134,  
2851     cost of consumption: 606  
2852 PIPELINE 948,  
2853     between: 171 and 508,  
2854     cost of consumption: 574  
2855 PIPELINE 949,  
2856     between: 380 and 416,  
2857     cost of consumption: 420  
2858 PIPELINE 950,  
2859     between: 414 and 318,  
2860     cost of consumption: 749  
2861 PIPELINE 951,  
2862     between: 288 and 33,  
2863     cost of consumption: 471  
2864 PIPELINE 952,  
2865     between: 461 and 385,  
2866     cost of consumption: 224  
2867 PIPELINE 953,  
2868     between: 360 and 406,  
2869     cost of consumption: 193  
2870 PIPELINE 954,  
2871     between: 81 and 275,  
2872     cost of consumption: 396  
2873 PIPELINE 955,  
2874     between: 267 and 318,  
2875     cost of consumption: 776  
2876 PIPELINE 956,  
2877     between: 107 and 356,  
2878     cost of consumption: 553  
2879 PIPELINE 957,  
2880     between: 30 and 114,  
2881     cost of consumption: 439  
2882 PIPELINE 958,  
2883     between: 151 and 285,  
2884     cost of consumption: 139  
2885 PIPELINE 959,  
2886     between: 224 and 153,  
2887     cost of consumption: 635  
2888 PIPELINE 960,  
2889     between: 48 and 55,  
2890     cost of consumption: 881  
2891 PIPELINE 961,  
2892     between: 72 and 344,  
2893     cost of consumption: 106  
2894 PIPELINE 962,  
2895     between: 114 and 293,  
2896     cost of consumption: 299  
2897 PIPELINE 963,  
2898     between: 477 and 141,  
2899     cost of consumption: 585  
2900 PIPELINE 964,  
2901     between: 58 and 223,  
2902     cost of consumption: 797  
2903 PIPELINE 965,  
2904     between: 113 and 490,  
2905     cost of consumption: 867  
2906 PIPELINE 966,  
2907     between: 301 and 85,  
2908     cost of consumption: 943  
2909 PIPELINE 967,  
2910     between: 361 and 115,  
2911     cost of consumption: 201  
2912 PIPELINE 968,  
2913     between: 43 and 266,  
2914     cost of consumption: 311  
2915 PIPELINE 969,  
2916     between: 234 and 491,  
2917     cost of consumption: 744  
2918 PIPELINE 970,  
2919     between: 328 and 27,  
2920     cost of consumption: 864  
2921 PIPELINE 971,  
2922     between: 229 and 99,  
2923     cost of consumption: 464  
2924 PIPELINE 972,  
2925     between: 162 and 213,  
2926     cost of consumption: 165  
2927 PIPELINE 973,  
2928     between: 481 and 178,  
2929     cost of consumption: 283  
2930 PIPELINE 974,  
2931     between: 181 and 236,  
2932     cost of consumption: 170  
2933 PIPELINE 975,  
2934     between: 157 and 350,  
2935     cost of consumption: 276  
2936 PIPELINE 976,  
2937     between: 451 and 139,  
2938     cost of consumption: 226  
2939 PIPELINE 977,  
2940     between: 78 and 500,  
2941     cost of consumption: 349  
2942 PIPELINE 978,  
2943     between: 330 and 31,  
2944     cost of consumption: 600  
2945 PIPELINE 979,  
2946     between: 356 and 265,  
2947     cost of consumption: 547  
2948 PIPELINE 980,  
2949     between: 24 and 82,  
2950     cost of consumption: 958  
2951 PIPELINE 981,  
2952     between: 259 and 311,  
2953     cost of consumption: 225  
2954 PIPELINE 982,

```
2955     between: 326 and 473,  
2956     cost of consumption: 166  
2957 PIPELINE 983,  
2958     between: 174 and 442,  
2959     cost of consumption: 352  
2960 PIPELINE 984,  
2961     between: 164 and 112,  
2962     cost of consumption: 325  
2963 PIPELINE 985,  
2964     between: 377 and 269,  
2965     cost of consumption: 123  
2966 PIPELINE 986,  
2967     between: 57 and 209,  
2968     cost of consumption: 222  
2969 PIPELINE 987,  
2970     between: 334 and 287,  
2971     cost of consumption: 170  
2972 PIPELINE 988,  
2973     between: 214 and 105,  
2974     cost of consumption: 753  
2975 PIPELINE 989,  
2976     between: 361 and 462,  
2977     cost of consumption: 755  
2978 PIPELINE 990,  
2979     between: 487 and 486,  
2980     cost of consumption: 509  
2981 PIPELINE 991,  
2982     between: 128 and 233,  
2983     cost of consumption: 188  
2984 PIPELINE 992,  
2985     between: 380 and 47,  
2986     cost of consumption: 597  
2987 PIPELINE 993,  
2988     between: 333 and 221,  
2989     cost of consumption: 32  
2990 PIPELINE 994,  
2991     between: 465 and 386,  
2992     cost of consumption: 424  
2993 PIPELINE 995,  
2994     between: 321 and 251,  
2995     cost of consumption: 917  
2996 PIPELINE 996,  
2997     between: 15 and 308,  
2998     cost of consumption: 22  
2999 PIPELINE 997,  
3000     between: 360 and 130.
```

solution.cpp

```

1 #include "the6.h"
2
3 /*
4  * For PART-I:
5  * If you consider each furnace room as a separate graph node,
6  * then you get disjoint set of subgraphs and it would not be possible to
7  * solve it with a minimum spanning tree (MST) algorithm.
8
9 Instead, consider each furnace room as THE SAME NODE, in other words;
10 make a single graph node and name it as the common furnace room. Let's
11 call this node as S. Now, for each pipeline connecting a building to
12 its own furnace room (namely the ones whose end ids are equal), replace it
13 with a pipeline connecting the building to S. For instance, if p is a
14 pipeline connecting building-5 to its own furnace room, now it will be
15 replaced with a pipeline p' connecting building-5 to S.
16
17 After reaaranging your graph as above, just apply one of the MST algorithms;
18 Kruskal's or Prim's. The below implementation applies Kruskal's algorithm.
19
20 FOR PART-II:
21 If you see the proof of Kruskal's algorithm for instance, you could
22 understand the idea below better. Here is the idea: If you add a new pipeline
23 to the existing MST, then it causes a LOOP. For instance, if the new pipeline
24 is between building-5 and building-17, then adding it onto the MST causes to
25 occur a loop between building-5 and building-17. Then, you should trace the
26 loop and find the maximum-costly pipeline, call Pmax. If its cost is lower
27 than the cost of the new pipeline, then there is nothing extra to do, you can
28 safely return the old MST as the updated one also. However, if the new pipeline
29 is less costly, then you should remove the Pmax, this preserves the tree-ness
30 property. And adding new pipeline onto the tree preserves the connectedness
31 of the tree. Now, you can return this updated MST.
32
33 Complexity of PART-II.
34 Tracing operation could be handled by BFS or DFS or any other similar O(N)
35 algorithm. Also, to be more efficient, you can hold the adjacency matrix
36 as a collection of lists where each list contains the neighbor ids of a node.
37 The below algorithm uses this data structure, and could handle with a graph
38 of the size 2^20 nodes on the VPL platform of OdtuClass.
39
40 */
41
42
43 // The merge sort which you know
44 void merge_sort(vector<Pipeline*>& pipelines, int from, int to) {
45
46     int size = to - from;
47     int left_end = (to-from)/2 + from;
48
49     if (size == 1)
50         return;
51     if (size == 2) {
52         if (pipelines[from]->cost_of_consumption > pipelines[from + 1]->cost_of_consumption) {
53             Pipeline* temp = pipelines[from];
54             pipelines[from] = pipelines[from + 1];
55             pipelines[from + 1] = temp;
56         }
57     }
58     return;
59 }
60
61 merge_sort(pipelines, from, left_end);
62 merge_sort(pipelines, left_end, to);
63 // merge
64
65 vector<Pipeline*> temp;
66 for (int i = from, j = left_end; ; ) {
67     if (temp.size() == size)
68         break;
69     if (i == left_end) {
70         temp.push_back(pipelines[j]);
71         j++;
72     }
73     else if (j == to) {
74         temp.push_back(pipelines[i]);
75         i++;
76     }
77     else if (pipelines[i]->cost_of_consumption > pipelines[j]->cost_of_consumption) {
78         temp.push_back(pipelines[j]);
79         j++;
80     }
81     else {
82         temp.push_back(pipelines[i]);
83         i++;
84     }
85 }
86 for (int i = 0, p = from; i < temp.size(); i++, p++)
87     pipelines[p] = temp[i];
88
89 }
90
91
92 // This tries to find the loop between the nodes <first> and <final> with DFS.
93 vector<int> findLoopByDFS(int first, int final, vector<vector<int>>& efficient_adj_matrix) {
94
95     // if there occurs some way connecting first to final, then it means there occurs a loop
96     // in that case, do not add the edge between first and final.
97
98     vector<int> parents(efficient_adj_matrix.size());
99     vector<bool> visited(efficient_adj_matrix.size());
100    for (int i = 0; i < efficient_adj_matrix.size(); i++) {
101        visited[i] = false;
102        parents[i] = -1;
103    }
104
105    stack<int> stack;           // holds the nodes to be visited
106    stack.push(first);
107
108    while(!stack.empty()) {
109
110

```

```

110     int next = stack.top();
111     stack.pop();
112
113     if (visited[next])
114         continue;
115     visited[next] = true;
116     vector<int> neighbors = efficient_adj_matrix[next];
117
118     for (int i = 0; i < neighbors.size(); i++) {
119         if (neighbors[i] == final) { // we found the loop
120
121             // just to satisfy linearity, find the size of the loop
122             int path_size = 2;
123             int node_ind = next;
124             while (node_ind != first) {
125                 node_ind = parents[node_ind];
126                 path_size++;
127             }
128
129             // now allocate a vector of that much size
130             vector<int> path(path_size);
131             path[0] = final;
132             path[1] = next;
133             int path_ind = 2;
134             node_ind = next;
135             while (node_ind != first) {
136                 node_ind = parents[node_ind];
137                 path[path_ind++] = node_ind;
138             }
139             return path;
140         }
141
142         if (visited[neighbors[i]])
143             continue;
144
145         parents[neighbors[i]] = next;
146         stack.push(neighbors[i]);
147     }
148
149 }
150
151 // no loop
152 vector<int> empty_result;
153 return empty_result;
154
155 }
156
157 vector<int> plan_min_cost_pipeline_usage(vector<Pipeline*> pipelines, int num_of_buildings) {
158
159     // Construct adjacency matrix
160     vector<vector<int>> efficient_adj_matrix;
161     for (int i = 0; i <= num_of_buildings; i++) {
162         vector<int> neighbors;
163         efficient_adj_matrix.push_back(neighbors);
164     }
165
166
167     // Kruskal's Algorithm
168     merge_sort(pipelines, 0, pipelines.size());
169
170     vector<Pipeline*> current_solution;
171     vector<int> min_spanning_tree;
172
173     for (int i = 0; i < pipelines.size(); i++) {
174
175         Pipeline* p = pipelines[i];
176
177         if (p->end1 == p->end2)
178             p->end2 = num_of_buildings; // temporarily make node id num_of_buildings
179
180         // check for loop
181         int next = p->end1;
182         int current_edge_index = -1; // we have not added this edge into the tree yet
183         if (!findLoopByDFS(p->end1, p->end2, efficient_adj_matrix).size() == 0) { // no loop
184             efficient_adj_matrix[p->end1].push_back(p->end2);
185             efficient_adj_matrix[p->end2].push_back(p->end1);
186             min_spanning_tree.push_back(p->id);
187         }
188
189         if (min_spanning_tree.size() == num_of_buildings)
190             return min_spanning_tree;
191     }
192
193     return min_spanning_tree; // not used, put to prevent warning
194 }
195
196
197 vector<int> optimize_plan(vector<Pipeline*> current_solution, Pipeline* new_pipeline) {
198
199     int num_of_buildings = current_solution.size();
200     if (new_pipeline->end1 == new_pipeline->end2)
201         new_pipeline->end2 = num_of_buildings; // temporarily make node id num_of_buildings
202
203     // Construct adjacency matrix
204     vector<vector<int>> efficient_adj_matrix(num_of_buildings+1);
205     vector<vector<int>> costs(num_of_buildings+1); // holds corresponding costs
206
207     for (int i = 0; i <= num_of_buildings; i++) {
208         vector<int> neighbors;
209         efficient_adj_matrix[i] = neighbors;
210
211         vector<int> edge_costs;
212         costs[i] = edge_costs;
213     }
214
215     // initialize adj and costs matrix
216     for (int i = 0; i < current_solution.size(); i++) {
217         if (current_solution[i]->end1 == current_solution[i]->end2)
218             current_solution[i]->end2 = num_of_buildings;
219

```

```

220     efficient_adj_matrix[current_solution[i]->end1].push_back(current_solution[i]->end2);
221     costs[current_solution[i]->end1].push_back(current_solution[i]->cost_of_consumption);
222     efficient_adj_matrix[current_solution[i]->end2].push_back(current_solution[i]->end1);
223     costs[current_solution[i]->end2].push_back(current_solution[i]->cost_of_consumption);
224 }
225
226 // initialize the new solution to the old version for now
227 vector<int> new_solution(num_of_buildings);
228 for (int i = 0; i < current_solution.size(); i++)
229     new_solution[i] = current_solution[i]->id;
230
231 // find the loop
232 vector<int> loop = findLoopByDFS(new_pipeline->end1, new_pipeline->end2, efficient_adj_matrix);
233 int max_weight_owner = -1;
234 int max_weight_of_loop = -1;
235 for (int i = 1; i < loop.size(); i++) { // we will remove the max-weight-edge from the ring(loop)
236
237     int node1_ind = loop[i-1];
238     int node2_ind = loop[i];
239     int current_cost;
240
241     for (int j = 0; j < efficient_adj_matrix[node1_ind].size(); j++) {
242         if (efficient_adj_matrix[node1_ind][j] == node2_ind) {
243             current_cost = costs[node1_ind][j];
244             break;
245         }
246     }
247
248 // detect the maximum-costly edge in the graph
249 if (max_weight_of_loop < current_cost) {
250     max_weight_of_loop = current_cost;
251     max_weight_owner = i;
252 }
253 }
254
255 // if the new pipeline has lower weight, then replace with the max-weight-pipeline
256 if (new_pipeline->cost_of_consumption < max_weight_of_loop) {
257     int node1_ind = loop[max_weight_owner-1];
258     int node2_ind = loop[max_weight_owner];
259
260     //find the edge between node1_ind and node2_ind
261     for (int i = 0; i < current_solution.size(); i++) {
262         if (current_solution[i]->end1 == node1_ind && current_solution[i]->end2 == node2_ind ||
263             current_solution[i]->end1 == node2_ind && current_solution[i]->end2 == node1_ind) {
264             new_solution[i] = new_pipeline->id;
265             break;
266         }
267     }
268 }
269 }
270
271 return new_solution;
272
273
274 }

```

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