

## Krypto\_Solver.java

```
1 import java.util.*;
2 public class Krypto_Solver {
3     private static ArrayList<Integer> numberOrder;
4     private static ArrayList<Integer> operationOrder;
5     private static ArrayList<String> stringOperations;
6     public static void main(String[] args) {
7         Scanner in = new Scanner(System.in);
8         int a = in.nextInt();
9         int b = in.nextInt();
10        int c = in.nextInt();
11        int d = in.nextInt();
12        int e = in.nextInt();
13        int target = in.nextInt();
14        findOrder(a,b,c,d,e,target);
15        int i1=0,i2=0,i3=0,i4=0,i5=0;
16        if (numberOrder.size()==5){
17            i1 = numberOrder.get(0);
18            i2 = numberOrder.get(1);
19            i3 = numberOrder.get(2);
20            i4 = numberOrder.get(3);
21            i5 = numberOrder.get(4);
22        }
23        findOperations(i1,i2,i3,i4,i5,target);
24        printAnswer();
25    }
26    public static ArrayList<Integer> findOrder(int a, int b, int c,
27    int d, int e, int target){
28        numberOrder=new ArrayList<Integer>();
29        int [] order = {a, b, c, d, e};
30        int iOne, iTwo, iThree, iFour, iFive;
31        for (int i=0;i<5;i++){
32            for (int j=0;j<5;j++){
33                for (int k=0;k<5;k++){
34                    for (int l=0;l<5;l++){
35                        for (int m=0;m<5;m++){
36                            if (i!=j && i!=k && i!=l && i!=m && j!=k
37                            && j!=l && j!=m && k!=l && k!=m && l!=m){
38                                iOne = order[i];
39                                iTwo = order[j];
40                                iThree = order[k];
41                                iFour = order[l];
42                                iFive = order[m];
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41         if (isCombo(iOne, iTwo,
42             iThree,iFour,iFive,target)){
43             numberOrder.add(iOne);
44             numberOrder.add(iTwo);
45             numberOrder.add(iThree);
46             numberOrder.add(iFour);
47             numberOrder.add(iFive);
48         }
49     }
50 }
51 }
52 }
53 }
54 }
55     return numberOrder;
56 }
57     public static boolean isCombo(int a, int b, int c, int d, int e,
58     int target){
59         double first, second, third, fourth;
60         for (int i=0;i<4;i++){
61             for (int j=0;j<4;j++){
62                 for (int k=0;k<4;k++){
63                     for (int l=0;l<4;l++){
64                         if (i==0){
65                             first = a + b;
66                         }
67                         else if (i==1){
68                             first = a-b;
69                         }
70                         else if (i==2){
71                             first = a*b;
72                         }
73                         else{
74                             first = (double)a/b;
75                         }
76                         if (j==0){
77                             second = first + c;
78                         }
79                         else if (j==1){
80                             second = first - c;

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81         else if (j==2){
82             second = first * c;
83         }
84         else{
85             second = first/c;
86         }
87         if (k==0){
88             third = second + d;
89         }
90         else if (k==1){
91             third = second - d;
92         }
93         else if (k==2){
94             third = second * d;
95         }
96         else{
97             third = second/d;
98         }
99         if (l==0){
100             fourth = third + e;
101         }
102         else if (l==1){
103             fourth = third - e;
104         }
105         else if (l==2){
106             fourth = third * e;
107         }
108         else{
109             fourth = third/e;
110         }
111         if (fourth==target){
112             return true;
113         }
114     }
115 }
116 }
117 }
118     return false;
119 }
120     public static ArrayList<Integer> findOperations(int a, int b, int
c, int d, int e, int target){
121         operationOrder = new ArrayList<Integer>();

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122     double first, second, third, fourth;
123     for (int i=0;i<4;i++){
124         for (int j=0;j<4;j++){
125             for (int k=0;k<4;k++){
126                 for (int l=0;l<4;l++){
127                     if (i==0){
128                         first = a + b;
129                     }
130                     else if (i==1){
131                         first = a-b;
132                     }
133                     else if (i==2){
134                         first = a*b;
135                     }
136                     else{
137                         first = (double)a/b;
138                     }
139                     if (j==0){
140                         second = first + c;
141                     }
142                     else if (j==1){
143                         second = first - c;
144                     }
145                     else if (j==2){
146                         second = first * c;
147                     }
148                     else{
149                         second = first/c;
150                     }
151                     if (k==0){
152                         third = second + d;
153                     }
154                     else if (k==1){
155                         third = second - d;
156                     }
157                     else if (k==2){
158                         third = second * d;
159                     }
160                     else{
161                         third = second/d;
162                     }
163                     if (l==0){
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164         fourth = third + e;
165     }
166     else if (l==1){
167         fourth = third - e;
168     }
169     else if (l==2){
170         fourth = third * e;
171     }
172     else{
173         fourth = third/e;
174     }
175     if (fourth==target){
176         operationOrder.add(i);
177         operationOrder.add(j);
178         operationOrder.add(k);
179         operationOrder.add(l);
180     }
181     }
182 }
183 }
184 }
185     return operationOrder;
186 }
187 public static void printAnswer(){
188     stringOperations = new ArrayList<String>();
189     String [] operations = {"+", "-", "*", "/"};
190     if (numberOrder.size()==5 && operationOrder.size()==4){
191         for (int i=0;i<4;i++){
192             stringOperations.add(operations[operationOrder.get(i)]);
193         }
194         System.out.println(numberOrder.get(0) +
195             stringOperations.get(0) + numberOrder.get(1) +
196             stringOperations.get(1) + numberOrder.get(2) +
197             stringOperations.get(2) + numberOrder.get(3) +
198             stringOperations.get(3) + numberOrder.get(4));
199     }
200     else
201         System.out.println("No solution is possible");
202 }
203 }

```