Given an airport's total monthly passenger counts for a period of N months, forecast its passenger count for the next 12 months.

Input Format

The first line contains an integer, N, denoting the number of months of passenger data. The N subsequent lines each contain the monthly passenger counts in the form of 2 tab-separated values:

The first value is MonthNum\_X, where X is an an integer denoting the month number.

The second value is an integer denoting the number of passengers for that month.

Scoring

The final score obtained upon submitting your code is solely dependent on the hidden test case. We will compute the mean of the magnitude of the percentage difference by comparing your expected answers with the actual sessions for each of the missing records in all test cases (samples included).

d=∑((∣expected−computed∣) / expected) × 100 (for all forecasted values in all test cases).

Your final score on a scale of 100 will be: 2.5×MAX(40−d/12, 0)

If the mean value of dd exceeds 40% (i.e.: your predictions are off by 40% or more on average), you will score zero. If your predictions are right on target, you will score 100.

When you hit Run Code (instead of submit), we will run your solution against the sample test only. At that time, the visible score will be normalized out of 1 rather than 100. In case your program throws an error (or has an incorrect output format) for a single test case, the overall score assigned will be zero.

You may make no more than 15 submissions for this problem, during the contest.

Constraints

N < 150

Output Format

For each line i (where 1 ≤ i ≤ 12), print the forecasted passenger count for month number N+i on a new line.

Sample Input

The following is a truncated version of the first Test Case:

60

MonthNum\_1 1226800

MonthNum\_2 926891

MonthNum\_3 782725

MonthNum\_4 1023038

MonthNum\_5 1126293

MonthNum\_6 692565

MonthNum\_7 1165880

MonthNum\_8 1207156

MonthNum\_9 1129954

MonthNum\_10 745100

MonthNum\_11 1059346

MonthNum\_12 1168555

MonthNum\_13 1317458

MonthNum\_14 528045

MonthNum\_15 1220238

MonthNum\_16 874557

MonthNum\_17 1033389

MonthNum\_18 1034165

MonthNum\_19 812094

MonthNum\_20 1351419

MonthNum\_21 801822

MonthNum\_22 1044266

MonthNum\_23 722871

MonthNum\_24 742100

MonthNum\_25 839471

MonthNum\_26 1201199

MonthNum\_27 796265

MonthNum\_28 953887

MonthNum\_29 1124602

MonthNum\_30 1070181

MonthNum\_31 1160366

MonthNum\_32 1131150

MonthNum\_33 1151813

MonthNum\_34 1065316

MonthNum\_35 914800

MonthNum\_36 1093034

MonthNum\_37 937898

MonthNum\_38 991612

MonthNum\_39 865649

MonthNum\_40 990565

MonthNum\_41 965414

MonthNum\_42 949248

MonthNum\_43 1168905

MonthNum\_44 593112

MonthNum\_45 1156922

MonthNum\_46 870095

MonthNum\_47 1023262

MonthNum\_48 788327

MonthNum\_49 543605

MonthNum\_50 510786

MonthNum\_51 734714

MonthNum\_52 1133025

MonthNum\_53 1461091

MonthNum\_54 635481

MonthNum\_55 1104107

MonthNum\_56 844960

MonthNum\_57 1271967

MonthNum\_58 574319

MonthNum\_59 1063900

MonthNum\_60 724737

Sample Output

1563178

1312558

1312558

1388316

1325942

1312550

587396

1293945

1061128

590392

1092215

1446327

Explanation

The 12 printed lines of output are the forecasted passenger counts for the 12 months following month 60 (i.e.: 61 through 72.