

Great Grading Scheme

Determine grade of a given mark.

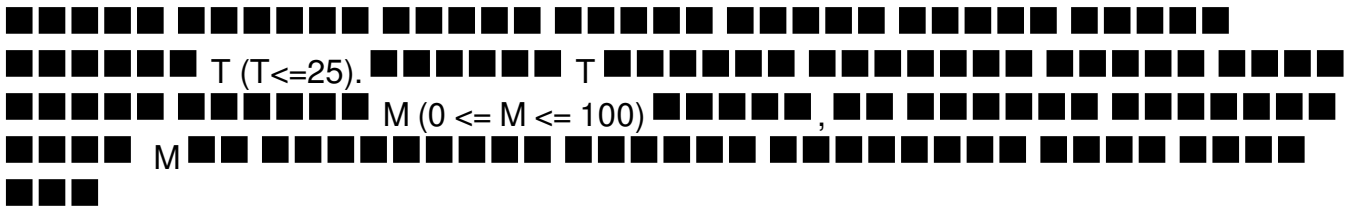
These are the scales:

Marks	Grade
80-100	A+
75-79	A
70-74	A-
65-69	B+
60-64	B
55-59	B-
50-54	C
45-49	D
0-44	F



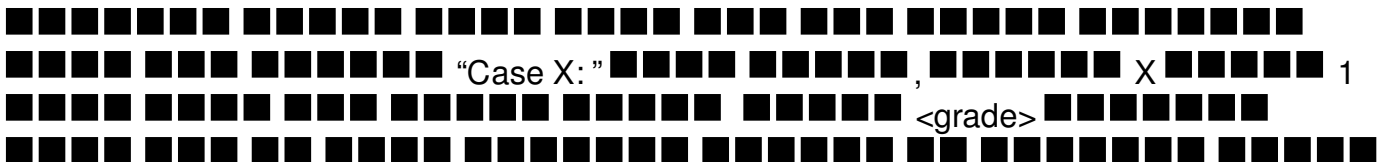
Input

First line of input contains the case number T ($T \leq 25$). Then next T lines contains an integer M ($0 \leq M \leq 100$) each, which is the marks obtained. You need to convert M to equivalent grade as specified in the chart above.



Output

For each case print a line in the following form: "Case X: <grade>", where X is the number of test case starting from 1 and <grade> must be replaced with the equivalent grade from the chart.



Example

Input:

3
80
42

Output:

Case 1: A+

Case 2: F

Case 3: B-