Function usages

Your task is to implement grading (multiple students at once) program which orders the result before displaying them. The following functions are already provided for you. To run the program, you can call these functions. (If you use them properly, you should implement less than 6 commands)

```
def read_answers():
    N = int(input())
    answers = []
    for k in range(N):
        sid, ans = input().split()
        answers.append([sid, ans])
    return answers

def marking(answer, solution):
    score = 0
    for i in range(len(answer)):
        if answer[i] == solution[i]:
            score += 1
    return score

def grading(score):
    g = [[80,"A"], [70,"B"],
         [60,"C"], [50,"D"]]
    for a,b in g:
        if score >= a:
            return b
    return "F"
```

```
def scoring(answers, solution):
    scores = []
    for sid, ans in answers:
        score = marking(ans, solution) /  \
                len(solution) * 100
        grade = grading(score)
        scores.append([sid, score, grade])
    return scores

def report(scores):
    for sid,sc,grade in scores:
        print(sid, sc, grade)

def sort(scores):
    x = []
    for sid,score,grade in scores:
        x.append([score, sid, grade])
    x.sort()
    for i in range(len(x)):
        scores[i] = [x[i][1], x[i][0], x[i][2]]
```

Input

The first line is the solution to our multiple-choice exam.

The second line is integer N which is the number of students.

The next N lines, each line has 2 strings separating by a space, the first string is student's ID and the second string is the student's answer for the exam.

Output

ID number, score, and grade for each student, arranged in descending order. If scores are equal, order according to student's ID (from large to small). The score is a percentage of the number of correct answers.

Example

Input	Output
AAAAA 5 0011 ABBBB 2222 AAAAB 3333 AAABB 4444 AAAAA 5555 AAAAB	4444 100.0 A 5555 80.0 A 2222 80.0 A 3333 60.0 C 0011 20.0 F