Longwood Invitational(Fall 2011)

Problem 4: NFL Quarterback Ranking (Contributed by Bob Webber, Longwood)

The National Football League (NFL) rates its passers according to an arcane formula adopted in 1973. Four criteria are used to compute a rating.

- Percent of completions
- Average yards gained per attempt
- Percent of touchdown passes
- Percent of interceptions

It is important to realize that the system is used only to rate passers. It does not include such things as a quarterback's running yards, running touchdowns, fumbles, etc.

According to www.nfl.com/help/quarterbackratingformula, the average standard is 1.0. To earn a 2.0, a passer must perform at exceptional levels; i.e., 70% completions, 10% touchdowns, 1.5% interceptions, and 11 yards average gain per pass attempt. The maximum a passer can earn in any category is 2.375.

In order to make the rating more understandable, the point rating is then converted into a scale of 100. It is possible for a passer who has performed exceptionally to have a rating exceeding 100.

In calculating the rating, we use the following values:

p = passes attempted
x = passes completed
y = total passing yards
t = number of touchdown passes
i = number of interceptions

to calculate four statistics: the percentage of successful completions, the average number of yards gained per attempt, the percentage of attempted passes which were touchdowns, and the percentage of attempted passes which were intercepted.

To find the points for each category, the ranking algorithm performs the following steps:

- To find the *points for passes completed* it subtract `30` from the *completion percentage* and multiplies the difference by `0.05`. If the result is less than `0`, it awards zero points. If the result is greater than `2.375`, it awards `2.375` points.
- To find the *points for yards gained* it subtracts `3` from the *average yards gained per attempt* and multiplies the difference by `0.25`. If the result is less than `0`, it awards zero points. If the result is greater than 2.375, it awards 2.375 points.
- To find the *points for touchdown passes* it multiplies the *touchdown percentage* by `0.2`. If the result is greater than `2.375`, it awards `2.375` points.
- To find the *points for (not having) interceptions* it multiplies the interception percent by `0.25` and subtracts the product from `2.375`. If the result is less than `0`, it awards zero points.

The final quarterback rating is the sum of the points for each category divided by 6 and then multiplied by 100.

For example, consider Steve Young's record setting 1994 season when he completed 324 of 461 passes for 3969 yards, 35 touchdowns, and 10 interceptions.

- The percentage of passes completed for this season was 324 out of 461 or 70.28%. This gives 2.014 points for passes completed.
- The average yards gained per attempt was 3969. Divided by 461 attempts, this gives 8.61 yards per attempt. This gives 1.403 points for yards gained.
- The percentage of touchdown passes was 35 touchdowns in 461 attempts or 7.59%. This gives 1.518 points for touchdowns.
- The number of interceptions was 10 interceptions in 461 attempts or 2.17%. This gives 1.833 points for interceptions.

Thus, Steve Young's quarterback rating was

(2.014 + 1.403 + 1.518 + 1.833) / 6 * 100 = 112.8 in that year.

Since anything over 100 is exceptional, Mr. Young had a great passing season.

Problem

Your job is to write a program that computes a quarterback's rating from his statistics.

Input

The input to the program will consist of a quarterback's name, number of passes attempted, passes completed, total passing yards, touchdown passes, and number of interceptions. Each field will be on a separate line. There will be only one quarterback in each input file.

Output

Your program should output the quarterback's name, a space, a dash, a space, and then the quarterback rating (displayed as a floating point value with exactly four decimal places).

Example

Input:

```
Young
461
324
3969
35
10
```

Output:

```
Young: 112.7937
```