

Problem 1: Not So Self-Driving

5 Points

Problem ID: `car`

Rank: 1

Introduction

Dwayne and Johnson are your partners in a group project for your autonomous-vehicles engineering course. However, none of you were paying attention in class, so you forget about the project until the night before it's due! Knowing there would be no time to train a decent self-driving algorithm in just a few hours, you, Dwayne, and Johnson all decide to fake a self-driving car with a few sensors and a bunch of if-statements.

Your task is to create an obstacle-avoidance system that will output instructions based on information about obstacle distance and the car's speed.

Program Input

The first line of the input from STDIN will contain a positive integer T denoting the number of test cases that follow. Each test case will have the following input:

- A single line containing two numbers separated by a colon. The numbers will be as follows:
 - A non-negative decimal value v , denoting the vehicle's current speed (in m/s).
 - A positive decimal value x , denoting the obstacle's distance from the front of the car (in m).
 - Both values will be rounded to two decimal places.

Example Input:

```
5
23.15:98.34
2.40:17.33
6.79:5.01
0.00:1.53
113.56:113.56
```

Program Output

For each test case, your program should output instructions to the car based on the following criteria:

- If the car is projected to collide with the obstacle in one second or less at the current speed, your program should output `SWERVE`
- Otherwise, if the car is projected to collide with the obstacle in five seconds or less at the current speed, your program should output `BRAKE`
- Otherwise, your program should output `SAFE`

Example Output:

```
BRAKE
SAFE
SWERVE
SAFE
SWERVE
```

Problem Constraints

$$T \leq 1000$$

$$0 \leq v \leq 200$$

$$1 \leq x \leq 400$$

Assume the obstacle is directly in front of the car.

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