

Problem 5: If I'd known it was a race, I'd have gone faster!

Folks sometimes get upset with Bill because he always obeys the speed limits when driving. He believes many drivers and even some law-enforcement officers are of the opinion that driving a few miles or kilometers per hour over the posted speed limit is okay.

To convince others that his behavior is reasonable, Bill wants to show others how small a benefit is obtained from this "gray-zone" speeding. The benefit most would attribute to speeding is getting to the destination more quickly. In this problem we're going to give Bill some information to support his argument.

Assume a driver travels on a straight road with a single traffic signal that cycles between green, yellow, and red (as usual). Given the position of the traffic signal on the road, the speed limit, and the time the signal is green, yellow, and red, we want to know the average decrease in time required to drive this segment of road if the driver speeds by a given amount. To make things simple, we'll assume the driver only stops for the red signal, and proceeds past the light if it is green or yellow. And the vehicle being driven is phenomenal! It can stop instantaneously, and can also instantaneously go from a stop to any arbitrary speed!

For example, consider a one kilometer road that effectively has no traffic signal (that is, assume the length of time the signal stays red is 0). If the speed limit is 60 kilometers per hour, then driving this road at the speed limit will require 1/60th of an hour, or 60 seconds. If the driver speeds through at 65 kilometers per hour, then it will take 1/65th of an hour, or about 55.4 seconds. So the driver saves an entire 4.6 seconds by speeding.

Input

There will be multiple input cases to consider. The input for each case is a line containing 7 integers giving the length of the road, the distance from the beginning of the road to the traffic signal, the length of time the signal is green, yellow, and red (in that order, each given in seconds), the speed limit, and the amount over the speed limit the driver drives. Distances are in kilometers, and speeds are in kilometers per hour. The line following the input for last case will contain 7 zeroes.

Output

For each case, display the case number and average number of seconds the driver will save by speeding, with one fractional digit. Answers that are within 0.1 second of the correct answer will be accepted.

Sample Input

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1 0 1 0 0 60 5
20 5 27 3 30 60 5
0 0 0 0 0 0 0
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Output for the Sample Input

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Case 1: 4.6
Case 2: 92.3
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