



2556 - Four Quarters

North America - Greater New York - 2002/2003

Four Quarters is a game of chance played with, well, four quarters. Two people, called A and B, each flip two quarters each round. They each gain or lose points each round based on the following tables:

Player A's payoff

Player B's payoff

There is no difference between Heads/Tails and Tails/Heads. As you can see, the odds are stacked in Player A's favor. At the beginning of the game, each player has 0 points, and points accumulate as the game progresses. At the end of the game, whichever player has the most points wins.

You must write a program that determines the probability that Player A will win, Player B will win, or they will tie, after a certain number of rounds. Assume that the coins are fair, i.e. that heads and tails are equally likely.

Input

There is no input file for this problem.

Output

Output a table that lists the probability that Player A will win, B will win, or they will tie, after each round for 1 to 20 rounds. The output for rounds 1 through 3 is given below.

Probabilities must be expressed as a percent, with 4 places after the decimal.

Sample Input

There is no sample input for this problem.

Sample Output

Round	A wins	B wins	Tie
1	43.7500%	18.7500%	37.5000%
2	56.6406%	22.2656%	21.0938%
3	62.3535%	22.7051%	14.9414%

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