

H2: Medium	20 pt		
H3: Hard	55 pt		
Types			
I1: Easy	20 pt		
I2: Medium	50 pt		
I3: Hard	80 pt		
Wanikani			
◯ J1: Easy	10 pt		
J2: Medium	35 pt		
J3: Hard	45 pt		
Re-enact			
K1: Easy	15 pt		
K2: Medium	40 pt		
K3: Hard	50 pt		
Promotions			
L1: Easy	5 pt		
L2: Medium	20 pt		
L3: Hard	60 pt		
() FAO			

(i) FAQ

My Clarifications

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Problem J1: Wanikani - Easy

10 points

Problem My Submissions

Wanikani is an online tool for learning *kanji*, Chinese characters that are used in Japanese. Each kanji has a reading* (how it's pronounced) and a meaning.

A review session in which you review N kanji actually has 2*N questions, as you're tested on the reading and meaning separately. In the corner of the screen is a counter that tracks the number of kanji for which you've finished reviewing both the meaning and reading, but nowhere does it tell you how many questions you have left.

You're currently partway through a review and the counter says K. You don't remember how many questions you've answered so far, but you'd like to know how many remain. What's the expected number of questions left in this review session, assuming that all questions come in a uniformly random order?

Constraints

- 10 < T < 20
- 1 < N < 5
- 0 < K < N

Input

Your input file starts with a non-negative integer T, the number of review sessions.

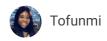
T lines will follow, each line contains two nonnegative integer N K representing the total amount of kanji and the number of kanji you have finished reviewing.

Output

The number of expected questions remaining in this review session. Absolute and relative errors of up to 10^{-6} will be ignored

FACEBOOK Coding Competitions

FB Hack > 2021 > EMEA Coding Challenge 2021



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Wanikani			
0	J1: Easy	10 pt	
	J2: Medium	35 pt	
	J3: Hard	45 pt	
Re-enact			
	K1: Easy	15 pt	
	K2: Medium	40 pt	
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Promotions			
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Sample Output

1.5

3.125

1.25

Explanation of Sample

In the first session having 1 kanji and a counter of 0 means either zero or one questions have been asked so far which means there could be 2 or 1 questions left, this gives us a expected value of 2*0.5+1*0.5=1.5

*Most kanji have many readings, but Wanikani mercifully teaches just the most important one

Sample Input

Sample Output

3 1 0 2 0 2 1

1.500000	
3.125000	
1.250000	