**PP4 - Lucky Karaoke Nights**

Scala is an intelligent restaurateur. He is always looking for schemes to increase his business. He decided to organise LUCKY KARAOKE NIGHTS in his restaurant. Any one member from each table is required to participate in the karaoke. The two schemes he offered to the customers are -

Scheme 1 - Scala bought an instrument which records the highest intensity of sound (in decibels: dB) that a person makes throughout his/her singing performance. The bill of the table to which the person belongs will not be charged if that person produces the highest intensity of sound among all the competitors who have come for the dinner at the restaurant.

Scheme 2 - Scala decided to write the table numbers of the occupied tables on separate small pieces of paper. Scala picks one of these at random. The bill of the table number in the picked up piece of paper gets a 50% discount on their bill. Also the tables having table numbers as integer multiples of this number get a 25% discount on their bill.

Your task is to determine the total value of discounts offered by Scala.  
Assumptions: If a table has won through Scheme 1, it won't be a part of Scheme 2 even if it qualifies for it. Assume there will never be a tie for Scheme 1. Also it is not necessary that all the tables are occupied.

1. Write a function with the following specifications -

Name: "promotionaLoss"  
Arguments:  
i) A dictionary with key as table numbers and value as a tuple containing the intensity of sound (dB - integers) and bill value of the table ($ - 2 places of decimal). Check example below for more clarity on this.  
ii) An integer - lucky table number on the piece of paper that is picked up.  
Return: The total value of discounts offered rounded off till 2 digits of precision (in dollars).

Paste your Python code for this function in the appropriate space below. Write 'NA' if you are unable to design this function.

2. Call the "promotionaLoss" function you have designed with the following arguments:

i) { 1: ('35dB', '$72.80'), 2: ('45dB', '$27.35'), 3: ('60dB', '$102.15'), 4: ('40dB', '$32.35'), 5: ('85dB', '$17.25'), 7: ('62dB', '$39.11'), 9: ('72dB', '$18.24'), 10: ('37dB', '$103.15'), 11: ('89dB', '$62.55'), 17: ('81dB', '$16.75'), 15: ('78dB', '$92.73'), 25: ('69dB', '$24.24'), 16: ('23dB', '$97.43'), 18: ('46dB', '$5.24'), 12: ('67dB', '$38.23'), 23: ('79dB', '$88.49'), 27: ('83dB', '$64.78'), 34: ('87dB', '$56.91'), 33: ('68dB', '$22.49'), 24: ('55dB', '$18.00'), 35: ('66dB', '$85.23'), 30: ('74dB', '$9.20'), 26: ('59dB', '$76.82'), 29: ('44dB', '$47.90'), 6: ('49dB', '$81.98'), 37: ('88dB', '$117.73'), 42: ('61dB', '$255.89'), 8: ('29dB', '$30.00'), 52: ('75dB', '$14.28'), 51: ('63dB', '$36.49') }  
ii) 4

Enter the returned value in the Result field below. Enter '$0' if you are unable to find this value.

====================  
Example For Clarity:   
Consider the dictionary as { 1: ('75dB', '$42.30'), 2: ('60dB', '$23.40'), 4: ('55dB', '$45.65'), 5: ('62dB', '$33.25') } and the lucky table number as 2.

Scheme 1: The highest intensity is 75dB for table 1. So this table will get 100% discount on their bill.  
Scheme 2: The lucky number is 2. So 50% discount for table 2 and 25% discount for table 4. No other multiples of 2 are present.

Total discount - $42.30 + 50% of $23.40 + 25% of $45.65 = '$65.41' (should be returned by the function)

--------  
This Practice Problem has been prepared by Nitish Mittal, Teaching Assistant, MIT 6.00.1x Fall 2015. This problem focusses on different Python objects.  
For any queries, you can reach out to him at - nitish\_mittal [at] outlook [dot] com

Massachusetts Institute of Technology