# START OF QUIZ
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## Question 1

Topic: Topic1
Source: Lecture 1

Suppose we are filling the table for the Levenshtein distance algorithm. We are in cell (x, y). The values of cell (x-1, y-1), (x-1, y), and (x, y-1) are 2, 1, and 2, respectively. What is the value we will put in cell (x, y), given that the letters are equal?

## Question 2

Topic: Topic2
Source: Lecture 2

How do we choose the number of clusters for K-means? What are the consequences if we choose poorly?

## Question 3

Topic: Topic1
Source: Lecture 1

When is cosine similarity appropriate as a similarity measure?

## Question 4

Topic: Topic3
Source: Lecture 3

If our vocabulary consists of just symbols A and B, and our corpus consists of the sequence: B A A B B A, and we build a bigram language model by applying add-one smoothing to the MLE from the corpus, what is the probability of P(B||A)? Please show your work.

## Question 5

Topic: Topic4
Source: Lecture 4

Why can we use logarithms for the Viterbi algorithm, but not for the Forward algorithm?

## Question 6

Topic: Topic3
Source: Lecture 3

If our vocabulary consists of just symbols A and B, and our corpus consists of the sequence: B A B A B A, and we build a bigram language model by applying add-one smoothing to the MLE from the corpus, what is the probability of P(B||A)? Please show your work.

## Question 7

Topic: Topic4
Source: Lecture 4

What is the main difference between the Viterbi algorithm and the Forward algorithm, and why does it allow us to find the optimal path through a sequence?

## Question 8

Topic: Topic2
Source: Lecture 2

Why is the Forgy initialization sub-optimal?

## Question 9

Topic: Coding
Source: Lecture 3

In class, we built a collocation matrix for a bigram language model. Modify the function so that it can handle trigram language model and implements ”add-alpha” smoothing, instead of ”add-one” smoothing.

# END OF QUIZ