

Feedback — Quiz 3: Distance Matrix Methods (manual)

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You submitted this quiz on **Mon 15 Jul 2013 7:58 AM PDT**. You got a score of **4.00** out of **4.00**.

Question 1

- **Prepare distance matrix**

Prepare a distance matrix similar to the one shown below. You can either download and print the matrix using the link, or you can construct your own on a piece of paper, or in a computer file:

Distance matrix: [\[Download link\]](#)

	A	B	C	D
A				
B				
C				
D				

- **Count pairwise distances:**

Below you will find a DNA alignment. Count the distance between each pair of sequences and enter the numbers in your distance matrix. (Recall that the distance between a pair of sequences is defined as the number of nucleotide positions where the two sequences differ).

DNA alignment: [\[Download link\]](#)

Sequence A: TCCGAGTCGATCAGC

Sequence B: AAGTACCCGTTGATC

Sequence C: AAGTTGCCGTTTCAGG

Sequence D: ACCGAGTCGATCTGC

- **Question:** What distances did you find? Enter the distances separated by spaces. The distances should be entered in the same order as they appear in the distance matrix (AB, AC, AD, BC, BD, CD).

You entered:

9 8 2 5 9 8

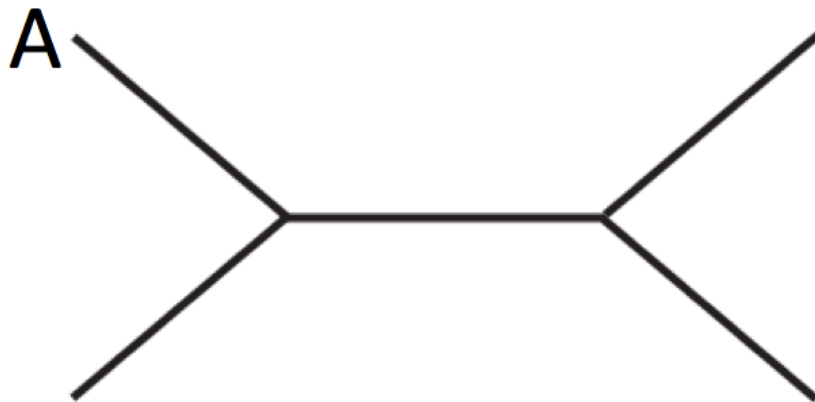
Your Answer		Score	Explanation
9	✓	0.17	
8	✓	0.17	
2	✓	0.17	

5	✓	0.17
9	✓	0.17
8	✓	0.17
Total		1.00 / 1.00

Question 2

- **Prepare tree sketch:**

Prepare a tree sketch, similar to the one shown below, on a piece of paper.

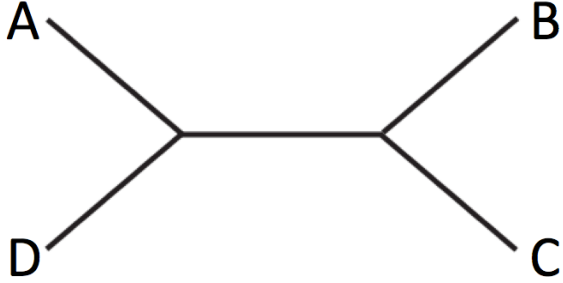
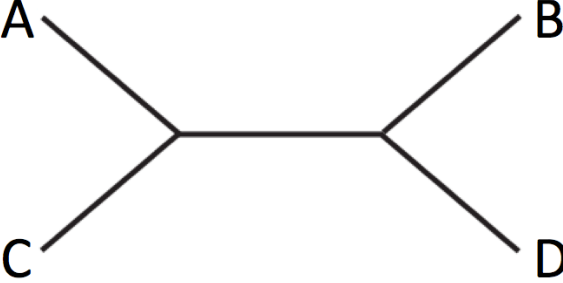
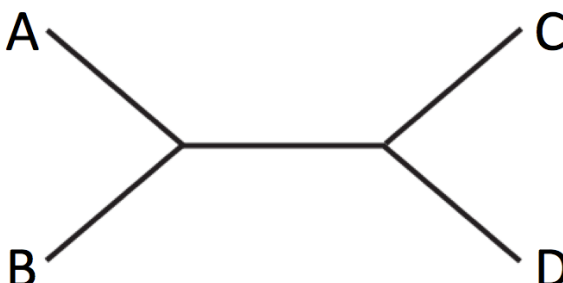


- **Reconstruct phylogenetic tree:**

Use the distance matrix from Question 1 as the basis for reconstructing an unrooted phylogenetic tree for the sequences A, B, C, and D. Specifically, add sequence labels (B, C, D) to your tree sketch, in the proper positions (I have already indicated the position of A). Label all five branches with the proper branch lengths. Make sure that all pairwise distances measured along branches are identical to the

values in your distance matrix! **Note:** branch lengths are not drawn to scale on the tree sketch!

- **Question:** Which of the following trees is the correct tree?

Your Answer	Score	Explanation
<input checked="" type="radio"/> 	<input checked="" type="checkbox"/> 1.00	
<input type="radio"/> 		
<input type="radio"/> 		
Total	1.00 / 1.00	

Question Explanation

There are only 3 possible trees for 4 sequences: A can be grouped with either B, C, or D.

Question 3

- What branch lengths did you find for the 4 terminal branches (the 4 branches that are connected to a leaf)? Enter the branch lengths separated by spaces in alphabetical order: A, B, C, D

You entered:

1 3 2 1

Your Answer**Score****Explanation**

1	✓	0.25
3	✓	0.25
2	✓	0.25
1	✓	0.25
Total		1.00 / 1.00

Question 4

- What branch length did you find for the internal branch (the branch that is not connected to any leaf)?

You entered:

5

Your Answer

Score

Explanation

5



1.00

Total

1.00 / 1.00