



## Review Test Submission: Problems 2 and 3

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Course	EN.605.647.81.SP21 Neural Networks
Test	Problems 2 and 3
Started	5/8/21 3:14 PM
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Status	Completed
Attempt Score	10 out of 20 points
Time Elapsed	12 minutes out of 30 minutes
Results Displayed	Submitted Answers, Feedback, Incorrectly Answered Questions

## Question 1

0 out of 10 points



Using the update formula, calculate the first vector element of the updated weight vector  $\mathbf{w}_n$  to the nearest integer value for node  $n$  depicted in the graphic at time index  $k = 1$ . If a vector element is negative, just handle that in the mathematically appropriate manner. In other words, use the negative value to complete any relevant computations.

Selected Answer: 36

Response Remember,  $k = 1$ . Another important consideration is the value of  $N(m,n)$ . Do the calculations using the neighborhood function and plug them into  $f(z)$ . In other words, how many nodes are nodes  $m$  and  $n$  apart?

## Question 2

5 out of 5 points



Given the Radial Basis Function that calculates the Euclidean Distance between two points in a plane as the activity value  $A$  a Perceptron, where the Perceptron takes 4 inputs, *i.e.*, for the first point, the  $x$  and  $y$  coordinates, and for the second point, the  $x$  and  $y$  coordinates and thus takes 4 inputs (see the graphic [Final-4-Input-Perceptron.pdf](#)) and produces the activity value  $A$  which is then input into the following activation function:

$$f(z) = e^{-z^2}.$$

Using the graphic [X-Y Chart of 4 Points.pdf](#) which pair of points is likely to yield the *highest* activation function value? To answer the question, consider which pairs of points are going to produce the lowest activation value and the highest activation value. Once you decide which pairs yield the highest activation value, make note of the points' labels and compute the absolute difference in their labels and submit that as your answer.

Selected Answer: 3

Response Feedback: Right.

**Question 3**

5 out of 5 points



Which pair of points is likely to yield the lowest value of the activation function? For this question, submit your answer by **adding** the values of the labels.

Selected Answer: 4

Response Feedback: You got it!

Saturday, May 8, 2021 3:27:04 PM EDT

← OK