Quiz 2

Started: Oct 14 at 2:54pm

Quiz Instructions

Question 1 — 1 pts

1. Can a Perceptron model represent boolean function XNOR? The table shows the results of XNOR computation on two independent binary variables.

X_1	X_2	Y
0	0	1
1	0	0
0	1	0
1	1	1

(A) Yes

(B) No

- ○ (A)
- ◉ (B)

Question 2 — 1 pts

2. Suppose that we have 3 identical unfair coins that for each coin, we have probability p to get head and $(1-p)$ to get tail. We toss them together and get 1 head and 2 tails. What is the likelihood $L(p)$?

(A) $L(p) = p$

(B) $L(p) = p(1-p)$

(C) $L(p) = 3p(1-p)^2$

(D) $L(p) = 3p^2(1-p)$

- ○ (A)
- ○ (B)

(C)

(D)

Question 3

1 pts

3. When the sigmoid function $\sigma(x) = \frac{1}{2}$, what value is x?

(A) -1

(B) $+\infty$

(C) $-\infty$

(D) 0

(A)

(B)

(C)

(D)

Question 4

1 pts

4. Following the previous question, what is the value of σ's derivative at this point?

(A) 0

(B) $-\frac{1}{4}$

(C) $\frac{1}{2}$

(D) $\frac{1}{4}$

- ○ (A)
- ○ (B)
- ○ (C)
- ◉ (D)

Question 5

1 pts

5. Given the four points in the table and figure below. Which of the following hyperplane achieves the largest margin?

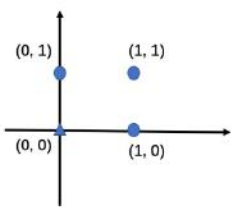
(A) $x_1 + x_2 - 0.75 = 0$

(B) $x_1 + 2x_2 - 0.75 = 0$

(C) $2x_1 + x_2 - 0.75 = 0$

(D) $x_1 + x_2 - 0.5 = 0$

X_1	X_2	Y
0	0	0
1	0	1
0	1	1
1	1	1



- ○ (A)
- ○ (B)
- ○ (C)
- ◉ (D)

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