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Grade received 100% To pass 80% or higher

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Practice quiz: Classification with logistic regression

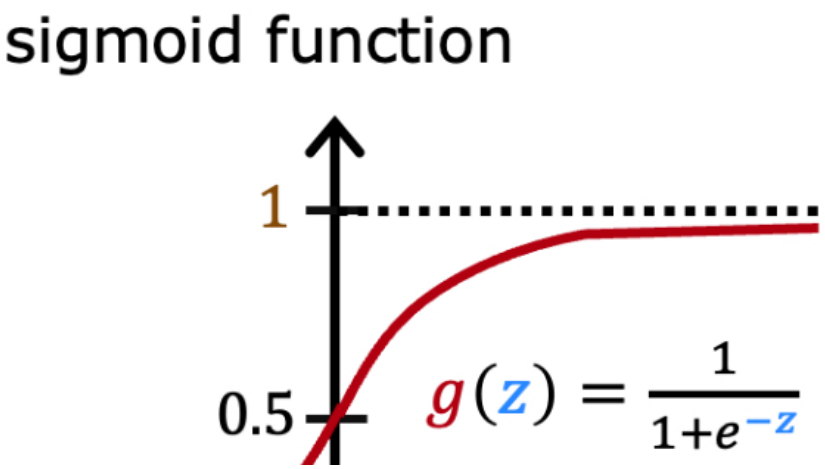
Latest Submission Grade 100%

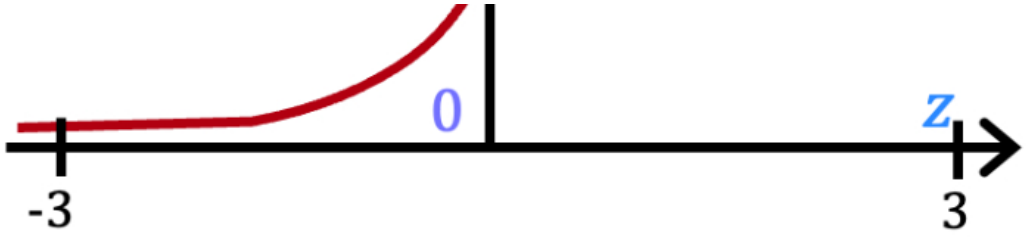
1. Which is an example of a classification task? **1 / 1 point**

- (●) Based on the size of each tumor, determine if each tumor is malignant (cancerous) or not.
- ( ) Based on a patient's blood pressure, determine how much blood pressure medication (a dosage measured in milligrams) the patient should be prescribed.
- ( ) Based on a patient's age and blood pressure, determine how much blood pressure medication (measured in milligrams) the patient should be prescribed.

Correct
This task predicts one of two classes, malignant or not malignant.

2. Recall the sigmoid function is $g(z) = \frac{1}{1+e^{-z}}$ **1 / 1 point**



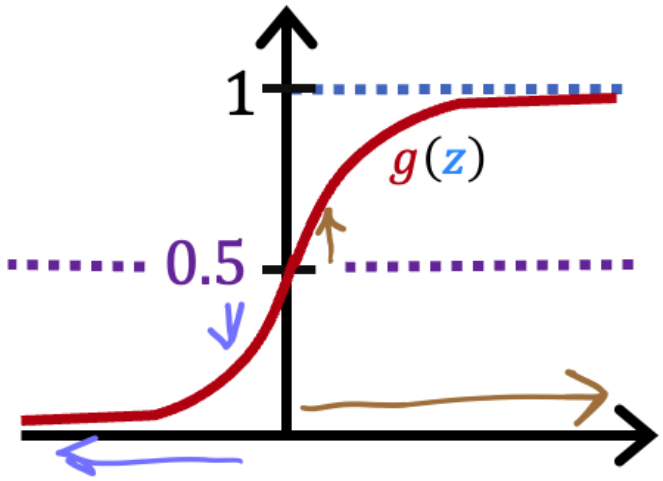


If z is a large positive number, then:

- ○ $g(z)$ will be near 0.5
- ◉ $g(z)$ is near one (1)
- ○ $g(z)$ is near negative one (-1)
- ○ $g(z)$ will be near zero (0)

Correct
Say z = $+100$. So e^{-z} is then e^{-100}, a really small positive number. So, $g(z) = \frac{1}{1+\text{a small positive number}}$ which is close to 1

3. **1 / 1 point**



A cat photo classification model predicts 1 if it's a cat, and 0 if it's not a cat. For a particular photograph, the logistic regression model outputs $g(z)$ (a number between 0 and 1). Which of these would be a reasonable

criteria to decide whether to predict if it's a cat?

- ○ Predict it is a cat if g(z) < 0.5
- ○ Predict it is a cat if g(z) = 0.5
- ◉ Predict it is a cat if g(z) >= 0.5
- ○ Predict it is a cat if g(z) < 0.7

Correct
Think of g(z) as the probability that the photo is of a cat. When this number is at or above the threshold of 0.5, predict that it is a cat.

4. **1 / 1 point**

True/False? No matter what features you use (including if you use polynomial features), the decision boundary learned by logistic regression will be a linear decision boundary.

- ◉ False
- ○ True

Correct
The decision boundary can also be non-linear, as described in the lectures.