Linear Regression Questions (Make Sure to watch the videos 1st)

Quiz Question

Which of the following are related to bias in machine learning

- [ ] Images, text, video, and speech are all types of data that can contain bias
- [ ] Since the data we used to train the model can contain bias, that could be reflected in the model.
- [ ] Statistical validation can offset the bias reflected in the real-world validation of your models.

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Write A, B, or C here (you can choose more than one answer if there is): _ _ _ A_

Let's say that we have a line whose equation is **y = -0.6x + 4**. For the point **(x,y) = (-5, 3)**, apply the **absolute trick** to get the new equation for the line, using a learning rate of $alpha = 0.1$.

Report your answer in the form **y = w_1x + w_2**, substituting appropriate values for **w_1** and **w_2**.

Enter your response here: _ _ _ _ _ _ _ _ _ _ _ _ _ _ y=0.1x+3.9_ _

Let's say that we have a line whose equation is **y = -0.6x + 4**. For the point **(x,y) = (-5, 3)**, apply the **square trick** to get the new equation for the line, using a learning rate of $alpha = 0.01$.

Report your answer in the form **y = w_1x + w_2**, substituting appropriate values for **w_1** and **w_2**.

Enter your response here: _ _ _ _ _ _ _ _ _ _ _ _ _ _ y=0.4x+3.96_ _

Quiz Question

Which of the following are true about gradient descent?

- [ ] Gradient descent is a strategy that helps minimize the error between points of the actual data and the "best-fit line"
- [ ] Gradient descent is a strategy that helps isolate outliers in the data.
- [ ] We use gradient descent to update the parameters of our model as we train

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Write A, B, or C here (you can choose more than one answer if there is): _ _ _ A,C_ _ _ _

Quiz Question

Which of the following are accurate statements about 'mean absolute error'?

- [ ] It is the sum of all the errors divided by m
- [ ] It is the average of all points above the line
- [ ] It is the average error of all points

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Write A, B, or C here (you can choose more than one answer if there is): _ _ _A,C _ _ _ _

Compute the **mean absolute error** for the following line and points:

- line: y = 1.2x + 2
- points: (2, -2), (5, 6), (-4, -4), (-7, 1), (8, 14)

Enter your response here: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 25/5=5_ _

_

Quiz for Mean Squared Error

Compute the **mean squared error** for the following line and points:

- line: y = 1.2x + 2
- points: (2, -2), (5, 6), (-4, -4), (-7, 1), (8, 14)

Enter your response here: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 186.92/5=37.38_ _

Quiz Question

There are 2 major ways to fit a line in machine learning. Which of the following are ways to fit a line?

- ☐ Minimize the error function using mean-squared or mean-absolute
- ☐ Try every possible position and slope of the line by hand until you get it right
- ☐ Using any of the tricks such as the absolute and the square trick

Write A, B, or C here (you can choose more than one answer if there is): _ _ A_ _ _ _ _

Quiz Question

Which of the following could be possible new dimensions for the house price dataset

- ☐ Number of bedrooms
- ☐ Age of house
- ☐ Opinions of neighbors
- ☐ Distance to shopping
- ☐ Types of restaurants nearby

Submit

Write A, B, C, D, or E here (you can choose more than one answer if there is): _ _All without c _ _ _ _ _ _