

[Quiz] Polynomial Modeling & Regularization

- Due 2 Mar at 23:59
- Points 11
- Questions 11
- Time limit None
- Allowed attempts 2

This quiz is no longer available as the course has been concluded.

Attempt history

	Attempt	Time	Score
LATEST	Attempt 1	10 minutes	11 out of 11

ⓘ Answers will be shown after your last attempt

Score for this attempt: 11 out of 11
Submitted 2 Mar at 11:48
This attempt took 10 minutes.

⋮

Question 1
1 / 1 pts

Which of the following are true about overfitting?

- ☒ regularizing helps reduce overfitting
- ☐ Having a high training and testing error is a good indicator of overfitting
- ☐ Having too simple of a model causes overfitting
- ☒ Overfitting is due to fitting to the noise of the data.
- ☒ Having a low training error and high testing error is a good indicator of overfitting
- ☒ Overfitting can arise due to having too many degrees of freedom

⋮

Question 2
1 / 1 pts

True or false. Applying regularization **always** results in equal or better performance on our test data.

- ☐ True
- ☒ False

⋮

Question 3
1 / 1 pts

Polynomial regression using ordinary least squares without regularization requires which of the following hyperparamters to be set?

- ☐ alpha (learning rate)
- ☐ weights
- ☐ lambda (regularization term)
- ☒ degree

⋮

Question 4
1 / 1 pts

A large lambda λ value for ridge regression can cause your model to _____ to the training data.

- ☐ fit perfectly
- ☐ overfit
- ☒ underfit

⋮

Question 5
1 / 1 pts

The following polynomial has how many degrees?

$22 + 2x + 3x^3 + 9x^4$

- ☐ 1
- ☒ 4
- ☐ 3
- ☐ 2

⋮

Question 6
1 / 1 pts

If our training data has 4 features and we apply a polynomial transformation using degree 5 to all our features, how many new features will we have?

- ☒ 20
- ☐ 4
- ☐ 25
- ☐ 15

⋮

Question 7
1 / 1 pts

A model is likely to be **overfitting** if it has a _____.

- ☐ low variance
- ☐ high bias
- ☐ low bias
- ☒ high variance

⋮

Question 8
1 / 1 pts

A model is likely to be **underfitting** if it has _____.

- ☐ low vairance
- ☐ high vairance
- ☒ high bias
- ☐ low bias

⋮

Question 9
1 / 1 pts

Which of the following are ways to regularize a model?

- ☒ in polynomial regression reducing the number of degrees
- ☐ using a more complex model
- ☒ regularization
- ☒ using a simpler model
- ☐ adding more features

⋮

Question 10
1 / 1 pts

Ridge regression applies which norm to our cost function?

- ☐ $||\mathbf{w}||_2$ L2 Norm
- ☐ $||\mathbf{w}||_1$ L1 Norm
- ☒ $||\mathbf{w}||_2^2$ L2 Squared Norm
- ☐ $||\mathbf{w}||_3$ L3 Norm

⋮

Question 11
1 / 1 pts

True or false. Regularization **can always fully solve** our overfitting problems even when our model is overly complex.

- ☐ True
- ☒ False

Quiz score: 11 out of 11

