

## ✓ Congratulations! You passed!

Grade received 100% Latest Submission Grade 100% To pass 80% or higher

[Go to next item](#)

1. Which of the following can address overfitting?

1 / 1 point

☒ Apply regularization



**Correct**

Regularization is used to reduce overfitting.

☒ Collect more training data



**Correct**

If the model trains on more data, it may generalize better to new examples.

☒ Select a subset of the more relevant features.



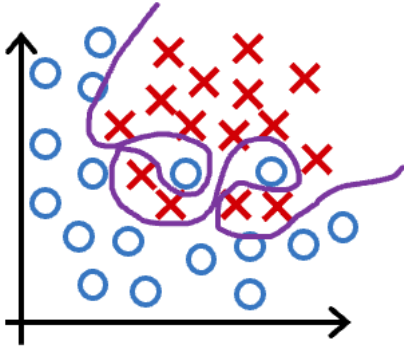
**Correct**

If the model trains on the more relevant features, and not on the less useful features, it may generalize better to new examples.

☐ Remove a random set of training examples

2. You fit logistic regression with polynomial features to a dataset, and your model looks like this.

1 / 1 point



What would you conclude? (Pick one)

- ☐ The model has high variance (overfit). Thus, adding data is, by itself, unlikely to help much.
- ☐ The model has high bias (underfit). Thus, adding data is, by itself, unlikely to help much.
- ☐ The model has high bias (underfit). Thus, adding data is likely to help
- ☒ The model has high variance (overfit). Thus, adding data is likely to help

✓ Correct

The model has high variance (it overfits the training data). Adding data (more training examples) can help.

3.

## Regularization

1 / 1 point

$$\min_{\vec{w}, b} J(\vec{w}, b) = \min_{\vec{w}, b} \left[ \underbrace{\frac{1}{2m} \sum_{i=1}^m (f_{\vec{w}, b}(\vec{x}^{(i)}) - y^{(i)})^2}_{\text{mean squared error}} + \underbrace{\frac{\lambda}{2m} \sum_{j=1}^n w_j^2}_{\text{regularization term}} \right]$$

Suppose you have a regularized linear regression model. If you increase the regularization parameter  $\lambda$ , what do you expect to happen to the parameters  $w_1, w_2, \dots, w_n$ ?

- ☐ This will increase the size of the parameters  $w_1, w_2, \dots, w_n$
- ☒ This will reduce the size of the parameters  $w_1, w_2, \dots, w_n$

✓ Correct

Regularization reduces overfitting by reducing the size of the parameters  $w_1, w_2, \dots, w_n$ .