

Your grade: 80%

You score 80% = 4 out of 5 questions. 80% = 4/5 means you scored at least 80% (4/5) every time you finished a question.

Next quiz: 10

1. Select the TRUE statement regarding the cost function for SVMs. 1/1 (100%)

- ☐ SVM uses a convex function as logistic regression
- ☐ SVM uses a loss function that penalizes wrong points to misclassification
- ☒ SVM uses hinge loss function as cost function
- ☐ SVM does not use a cost function. They are regularization method of a cost function.

Correct
Correct. You can find more information in the lesson: The Support Vector Machines Cost Function.

2. Which statement about Support Vector Machines is TRUE? 1/1 (100%)

- ☐ Support Vector Machines models can be used for regression but not for classification.
- ☐ Support Vector Machines models are not linear.
- ☐ Support Vector Machines models work best with noisy data.
- ☒ Support Vector Machines models can be used for classification but not for regression.

Incorrect
Incorrect. Please review the lesson: Regularization in Support Vector Machines.

3. Overfitting is larger term will penalize the SVM coefficients more heavily. 1/1 (100%)

- ☐ True
 - ☒ False
- Correct**
Correct. You can find more information in the lesson: Regularization in Support Vector Machines.

4. Regularization in the context of support vector machine (SVM) learning is meant to: 1/1 (100%)

- ☐ Using all features in a common scale to ensure they have equal weight
- ☐ Ensure that the data points are not too close to each other
- ☒ Avoid the impact that some misclassification have on the cost function
- ☐ Encourage the model to generalize during training

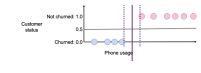
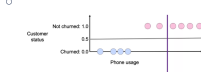
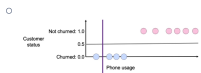
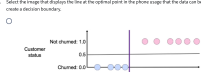
Correct
Correct. In SVM, you have to come up with a way of applying it allow for some points to be misclassified without the process. This is where the regularization in SVM comes into play.

5. Support vector machines can be extended to work with nonlinear decision boundaries by: 1/1 (100%)

- ☐ modifying the model for each new data
- ☐ projecting the feature space onto a lower dimensional space
- ☐ incorporating polynomial regression
- ☒ using the kernel trick

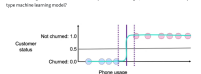
Correct
Correct. Support vector machines can be extended to non-linear decision boundaries using the kernel trick.

6. Select the image that displays the line at the optimal point in the phase space that the data can be split to create a decision boundary. 1/1 (100%)



Correct
Correct. This is the optimal point in the phase space to split the data and create a decision boundary.

7. The below image shows the decision boundary with a clear margin. A soft decision boundary belongs to what type machine learning model? 1/1 (100%)



- ☐ Support Vector Machine
- ☐ Linear Vector Machine
- ☐ Machine Learning
- ☒ Support Vector Machine

Correct
Correct. This is a model of a Support Vector Machine because the data and not samples that define the margin. The shaded lines are called support vectors.

8. SVM with kernels can be very slow on large datasets. To speed up SVM training, which methods may you prefer to map low dimensional data into high dimensional data? 1/1 (100%)

- ☒ Random Forest
- ☒ Correct
- ☒ Correct
- ☒ Correct
- ☐ Regularization
- ☐ Linear SVM

Correct
Correct. The Random Forest method can be used to map low dimensional data into high dimensional data.

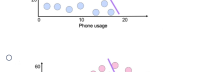
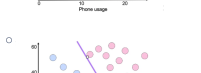
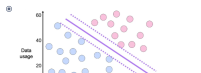
Correct
Correct. The SVM method can be used to map low dimensional data into high dimensional data.

9. Choosing the Machine Learning workflow what model choice would you pick if you have "raw" features and a "raw" target variable? 1/1 (100%)

- ☐ Linear Regression or Logistic
- ☒ Simple Logistic or Linear
- ☐ Logistic or Neural Approximation
- ☐ Not with SVM

Incorrect
Incorrect. Review the implementing Support Vector Machines Kernel Models video.

10. Select the image that best displays the line that separates the classes. 1/1 (100%)



Correct
Correct. This image displays the line that best separates the classes.