

Your grade: **100%**

Your latest: **100%** • Your highest: **100%** • To pass you need at least 60%. We keep your highest score.

Next item →

1. Select the TRUE statement regarding the cost function for SVMs:

1 / 1 point

- ☐ SVMs use same loss function as logistic regression
- ☒ SVMs use the Hinge Loss function as a cost function
- ☐ SVMs do not use a cost function. They use regularization instead of a cost function.
- ☐ SVMs use a loss function that penalizes vectors prone to misclassification

✓ **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 point

- ☒ Support Vector Machine models rarely overfit on training data.
- ☐ Support Vector Machine models are non-linear.
- ☐ Support Vector Machine models can be used for classification but not for regression.
- ☐ Support Vector Machine models can be used for regression but not for classification.

✓ **Correct**

Correct! You can find more information in the lesson *Regularization in Support Vector Machines*.

3. (True/False) A large c term will penalize the SVM coefficients more heavily.

1 / 1 point

- ☐ 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 point

- ☐ encourage the model to ignore outliers during training
- ☐ smooth the input data to reduce the chance of overfitting
- ☐ bring all features to a common scale to ensure they have equal weight
- ☒ lessen the impact that some minor misclassifications have on the cost function

✓ **Correct**

Correct. In SVM, you have to come up with a way of optimizing to allow for some points to be misclassified within the process. This is where the regularization in SVM comes into play.

5. Support vector machines can be extended to work with nonlinear classification boundaries by _____.

1 / 1 point

- ☒ using the kernel trick
- ☐ projecting the feature space onto a lower dimensional space
- ☐ incorporating polynomial regression
- ☐ modifying the standard sigmoid function

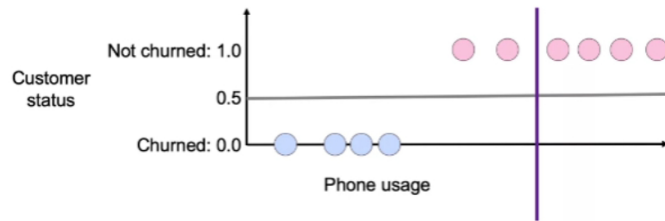
✓ **Correct**

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

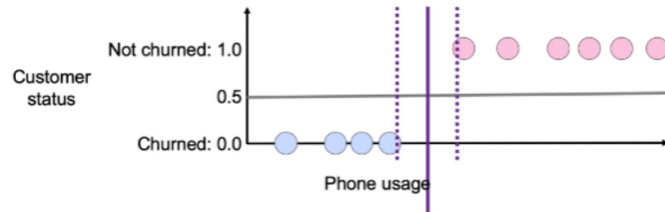
6. Select the image that displays the line at the optimal point in the phone usage that the data can be split to create a decision boundary.

1 / 1 point

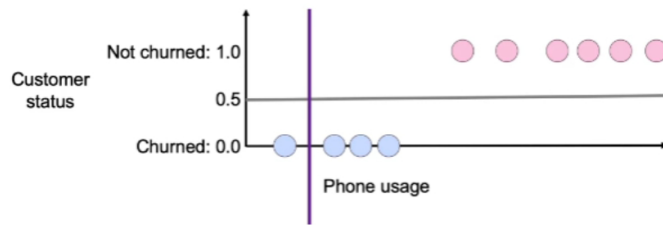
☐



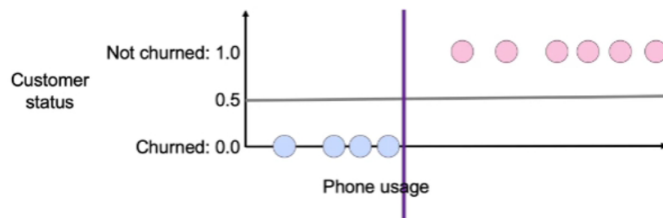
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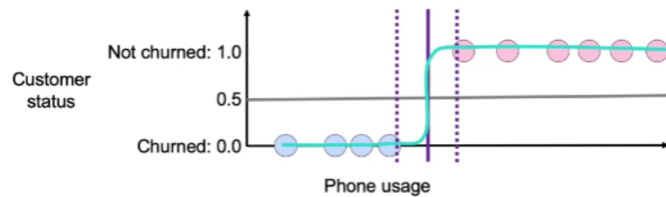


✔ Correct

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

7. The below image shows the decision boundary with a clear margin, such decision boundary belongs to what type machine learning model?

1 / 1 point



☐ Support Vector Machine

☐ Machine Learning

☐ Super Vector Machine

☒ Support Vector Machine

✓ **Correct**

Correct. This is a model of a Support Vector Machine because the blue and red samples that define the margin, the dotted 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 perform to map low dimensional data into high dimensional beforehand?

1 / 1 point

- ☐ Regularization
- ☐ Linear SVC
- ☒ RBF Sampler

✓ **Correct**

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

- ☒ Nystroem

✓ **Correct**

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

9. Concerning the Machine Learning workflow what model choice would you pick if you have "Few" features and a "Medium" amount of data?

1 / 1 point

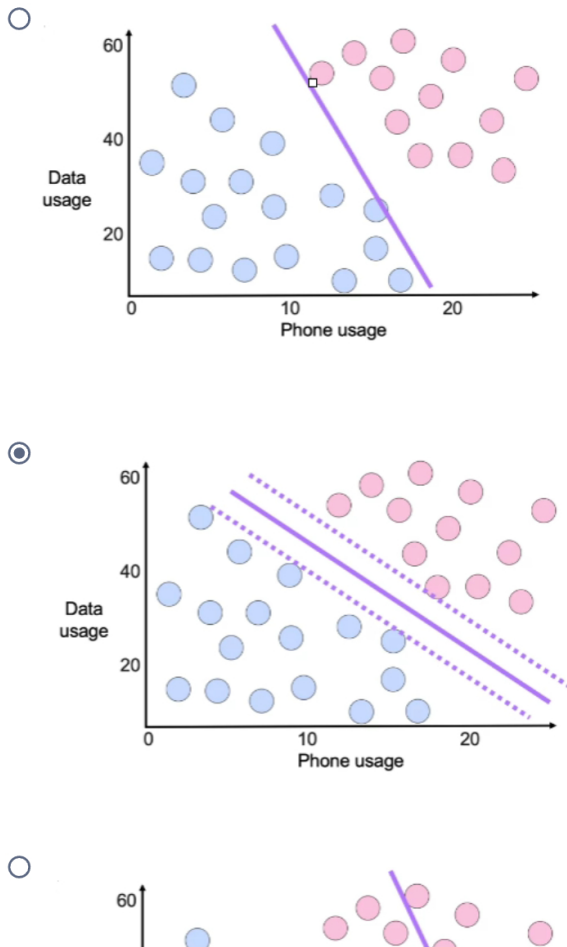
- ☒ SVC with RBF
- ☐ LinearSVC, or Kernel Approximation
- ☐ Simple, Logistic or LinearSVC
- ☐ Add features, or Logistic

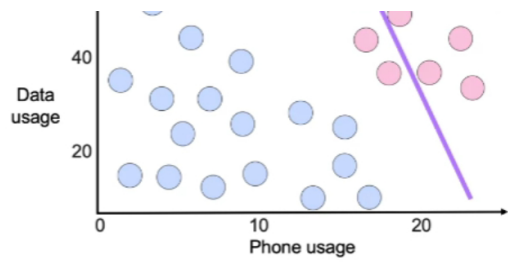
✓ **Correct**

Correct. You would use SVC with RBF as your model with "Few" features and a "Medium" amount of data.

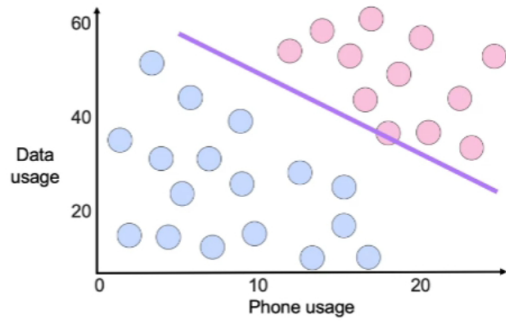
10. Select the image that best displays the line that separates the classes.

1 / 1 point





☐



☒ **Correct**

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