1 point

1. Select correct statements about overfitting:

- [ ] Overfitting is a situation where a model gives comparable quality on new data and on a training sample
- [x] Overfitting is a situation where a model gives lower quality for new data compared to quality on a training sample
- [ ] Overfitting happens when model is too simple for the problem
- [x] Large model weights can indicate that model is overfitted

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1 point

2. What disadvantages do model validation on holdout sample have?

- [x] It can give biased quality estimates for small samples
- [ ] It requires multiple model fitting
- [x] It is sensitive to the particular split of the sample into training and test parts

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1 point

3. Suppose you are using k-fold cross-validation to assess model quality. How many times should you train the model during this procedure?

- ○ 1
- ◉ k
- ○ $k(k-1)/2$
- ○ k^2

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1 point

4. Select correct statements about regularization:

- [ ] Reducing the training sample size makes data simpler and then leads to better quality
- [x] Weight penalty drives model parameters closer to zero and prevents the model from being too sensitive to small changes in features
- [x] Regularization restricts model complexity (namely the scale of the coefficients) to reduce overfitting
- [ ] Weight penalty reduces the number of model parameters and leads to faster model training

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