# Regularization

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| **#** | **Question** | **Answer** |
| 1 | Suppose you ran logistic regression twice, once with λ=0, and once with λ=1. One of the times, you got  parameters θ=[23.4; 37.9], and the other time you got  θ=[1.03; 0.28]. However, you forgot which value of  λ corresponds to which value of θ. Which one do you  think corresponds to λ=1? | θ=[1.03; 0.28] |
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Q. You are training a classification model with logistic regression. Which of the following statements are rue? Check all that apply.

√ Adding many new features to the model makes it more likely to overfit the training set.

X Adding a new feature to the model always results in equal or better performance on examples not in the training set.

X Introducing regularization to the model always results in equal or better performance on the training set.

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Q. Which of the following statements about regularization are true? Check all that apply.

X Using a very large value of λ cannot hurt the performance of your hypothesis; the only reason we do not set λ to be too large is to avoid numerical problems.

X Because regularization causes J(θ) to no longer be convex, gradient descent may not always converge to the global minimum (when λ>0, and when using an appropriate learning rate α).

X Because logistic regression outputs values 0≤hθ(x)≤1, its range of output values can only be "shrunk" slightly by regularization anyway, so regularization is generally not helpful for it.

√ Using too large a value of λ can cause your hypothesis to underfit the data.