homework 2

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Machine Learning

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1. Probability error: if $y = f(x)$but$P(x)$is error, then get $\mu\lambda$
   Similarly in otherwise situation get $(1-\mu)(1-\lambda)$

2. By problem 1: we get performance of $h = \mu\lambda + 1 - \mu - \lambda + \mu\lambda$
   We want to make μ independent of performance of h let $2\mu\lambda - \mu = 0$ get $\lambda = \frac{1}{2}$

3. By $\delta = 4(2N)^{d_{vc}}\exp(-\frac{1}{8}\varepsilon^2 N)$
   put $d_{vc} = 10$ and $\delta = 0.05$ and $\varepsilon = 0.05$
   get $0.05 = 4096e^{-0.0003152N}N^{10}$
   put it into matlab
   get $N \approx 493$

4. Using simple upper bound $N^{d_{vc}}$

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