$\frac{d}{dw} = 0$ $\lambda > 0$

7 ↓ ↓

$\|Xw - y\|^2 + \lambda \|w\|^2$

$0 + \lambda \|w\|^2$

$2\lambda \|w\|$

1. $1/32$

2 $1/2^6$ flips choice

a .5.5.5.5.5 .5 = $1/64$

H H T T H

2 4 8 16 32 64

b) 64

$(2/3)^5 = .1316 * .5 = .0658$

6.58%

$1/2 \cdot 1/2$ $1/4$ $3/12$

$+ 2/3 \cdot 1/2$ $1/3$ $4/12$

$7/12$

$7/12$ $5/12$

$(7/12)^3 + (5/12)^2 = 3.44\%$

3 $\ln(p^2 + (1-p)^3) = 2/p - 3/(1-p)$

$\frac{d}{dp}\ 2/p - 3/(1-p) = 2/p - 3/(1-p) = 0$

$2/5$ $p = 2/5$

$1/5$