hw1

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April 18, 2019

Problem 2

Looking to solve:

- P(c = 0 | X1 = X2)
- P(c = 1 | X1 = X2)
- P(c = 2 | X1 = X2)

0 Collisions

P(c = 0 | X1 = X2) = P(c = 0 | X1 = X2 = 1) + P(c = 0 | X1 = X2 = 2)

P(c = 0 | X1 = X2 = 1) = P(X1 = X2 = 1 and c = 0) / P(X1 = X2 = 1)

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P(X1 = X2 = 1) = P(X1 = 1) * P(X2 = 1 | X1 = 1)
               = 2p(1-p) + [P(X2 = 1 | no activation) + P(X2 = 1 | activation)]
               = 2p(1-p) * [(1-p)(1-q) ) + p(1-p)q + (1-p)pq]
               = 0.24192
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