

Assignment 1

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3

3.1

$$E[X] = \sum_{i=0}^5 i \cdot p(i) = 0 \cdot 0.3 + 1 \cdot 0.1 + 2 \cdot 0.2 + 3 \cdot 0 + 4 \cdot 0.4 + 5 \cdot 0 = 2.1$$

The cumulative histogram of X: $c(i) = \sum_{j=0}^i p(j)$

Bin	0	1	2	3	4	5
Value	0.3	0.4	0.6	0.6	1	1

3.2

$$D_{L_1} = \sum_{i=0}^5 |p(i) - q(i)| = 0.3 + 0 + 0.1 + 0 + 0.2 + 0.4 = 1$$