Task 3

Group 15
Lassi Laaksosaari
Angel Ontiveros

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a)

$$E[P_x] = \sum_{i=0}^{n} xp(x) = 0.3 * 0 + 0.1 * 1 + 0.2 * 2 + 0.4 * 4 = 0.1 + 0.4 + 1.6 = 2.1$$

x	0	1	2	3	4	5
F(X=x)	0.3	0.4	0.6	0.6	1	1

b)

$$D_{L1} = \sum_{i=0}^{n} \mid P(x) - Q(x) \mid = \sum_{x=0}^{5} \mid P(x) - Q(x) \mid$$

$$=\mid 0.3 - 0 \mid + \mid 0.1 - 0.1 \mid + \mid 0.2 - 0.3 \mid + \mid 0 - 0 \mid + \mid 0.4 - 0.2 \mid + \mid 0 - 0.4 \mid = 0.3 + 0.1 + 0.2 + 0.4 = 1$$