

250201073

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$$X = A + B * C \quad A = [1,2,3,4,5,6] \quad B = [1,2,3,4] \quad C = [1,2]$$

$$-3 = 1 + 4(-1) \quad 1 = 2 + 1(-1) \quad 3 = 4 + 1(-1) \quad 5 = 6 + 1(-1)$$

$$-2 = 1 + 3(-1) \quad 1 = 3 + 2(-1) \quad 3 = 5 + 2(-1) \quad 5 = 1 + 4*1$$

$$-2 = 2 + 4(-1) \quad 1 = 4 + 3(-1) \quad 3 = 6 + 3(-1) \quad 5 = 2 + 3*1$$

$$-1 = 1 + 2(-1) \quad 1 = 5 + 4(-1) \quad 3 = 1 + 2*1 \quad 5 = 3 + 2*1$$

$$-1 = 2 + 3(-1) \quad 2 = 3 + 1(-1) \quad 3 = 2 + 1*1 \quad 5 = 4 + 1*1$$

$$-1 = 3 + 4(-1) \quad 2 = 4 + 2(-1) \quad 4 = 5 + 1(-1) \quad 6 = 5 + 1*1$$

$$0 = 1 + 1(-1) \quad 2 = 5 + 3(-1) \quad 4 = 6 + 2(-1) \quad 6 = 2 + 4*1$$

$$0 = 2 + 2(-1) \quad 2 = 6 + 4(-1) \quad 4 = 1 + 3*1 \quad 6 = 3 + 3*1$$

$$0 = 3 + 3(-1) \quad 2 = 1 + 1*1 \quad 4 = 2 + 2*2 \quad 6 = 4 + 2*1$$

$$0 = 4 + 4(-1) \quad 4 = 3 + 1*1$$

$$7 = 6 + 1*1 \quad 8 = 4 + 4*1 \quad 9 = 5 + 4*1$$

$$7 = 5 + 2*1 \quad 8 = 5 + 3*1 \quad 9 = 6 + 3*1$$

$$7 = 4 + 3*1 \quad 8 = 6 + 2*1 \quad 10 = 6 + 4*1$$

$$7 = 3 + 4*1$$

## Calculations

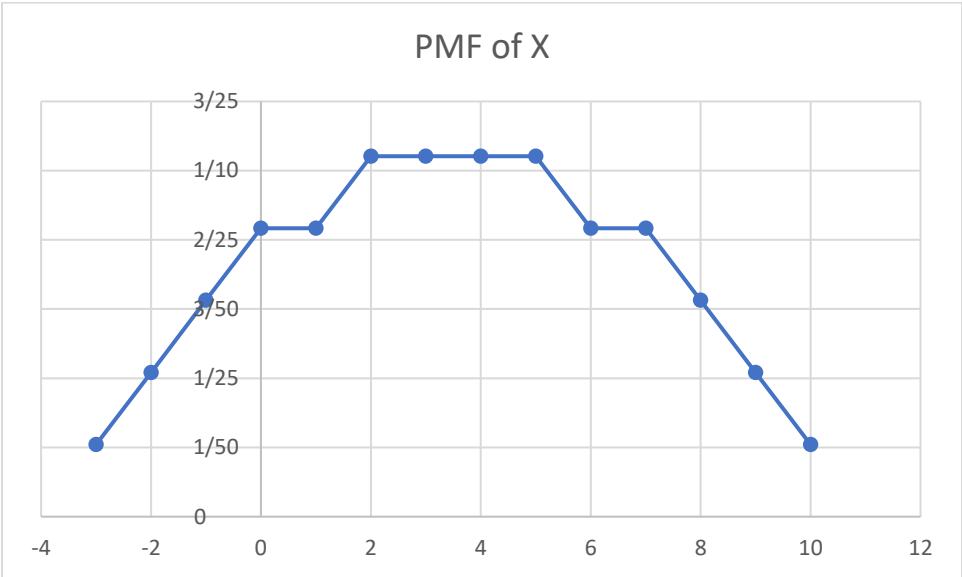
$$E[x] = (-3/48) + (-4/48) + (-3/48) + 0 + 4/48 + 10/48 + 15/48 + 25/48 + 24/48 + 28/48 + 24/48 + 18/48 + 10/48 = 3.5$$

$$E[x^2] = 9/48 + 8/48 + 3/48 + 0 + 4/48 + 20/48 + 45/48 + 80/48 + 144/48 + 196/48 + 192/48 + 162/48 + 100/48 = 22.66$$

$$\text{Var}[x] = E[x^2] - E[x]^2 = 22.66 - 12.25 = 10.41$$

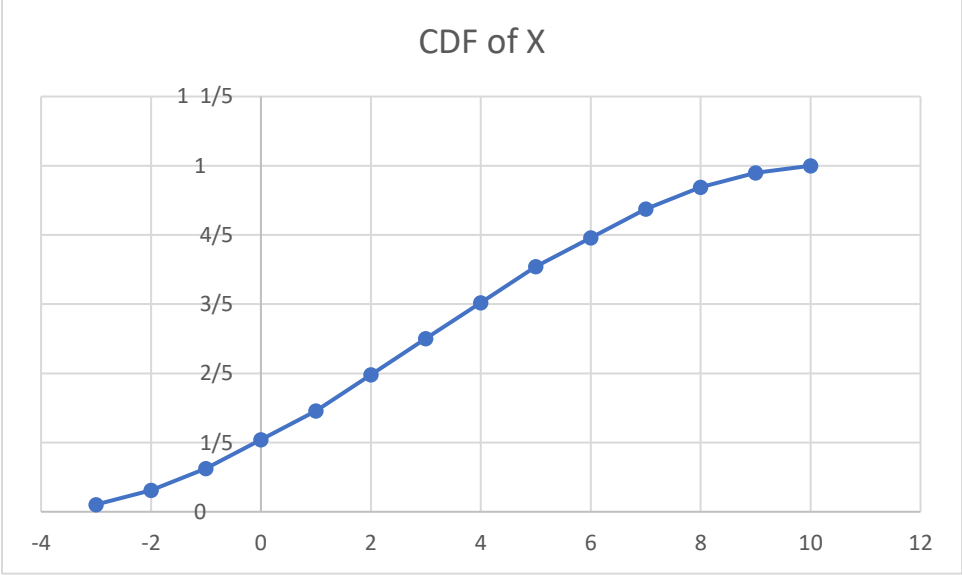
PMF of X

x	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
f(x)	1/48	3/48	6/48	10/48	14/48	19/48	24/48	29/48	34/48	38/48	42/48	45/48	47/48	48/48

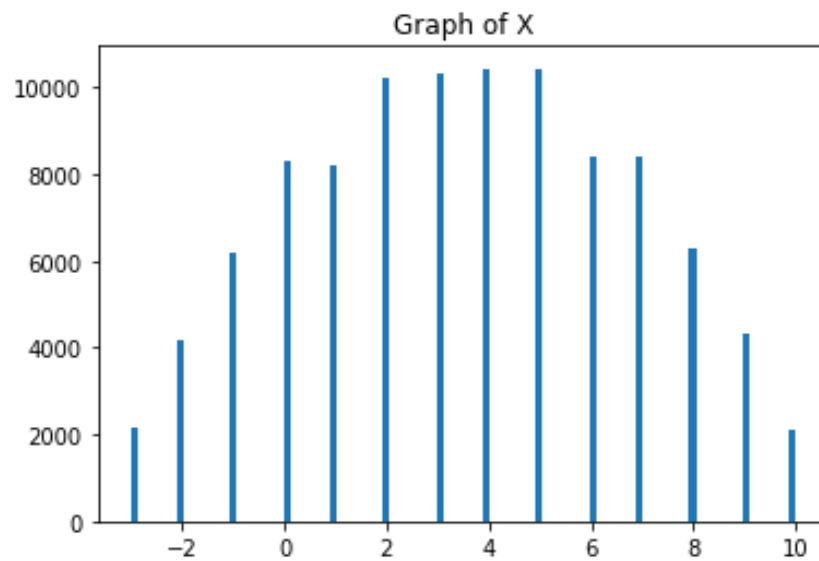


CDF of X

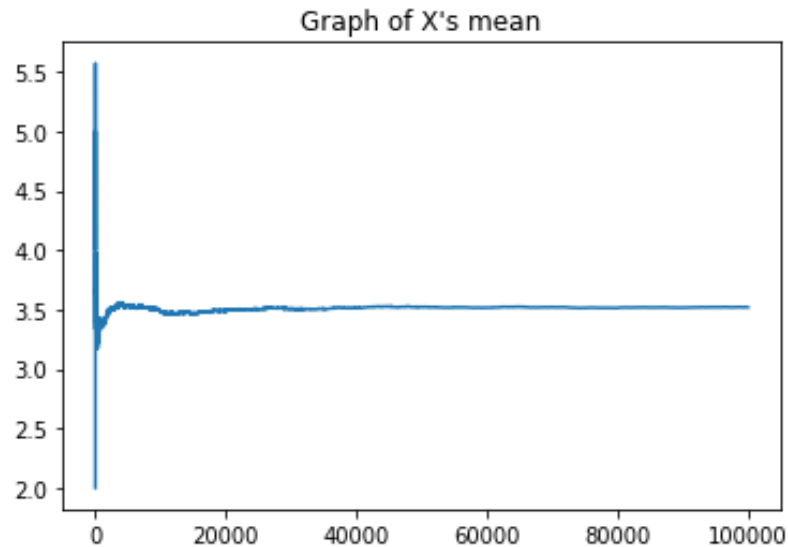
x	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
F(x)	1/48	2/48	3/48	4/48	4/48	5/48	5/48	5/48	5/48	4/48	4/48	3/48	2/48	1/48



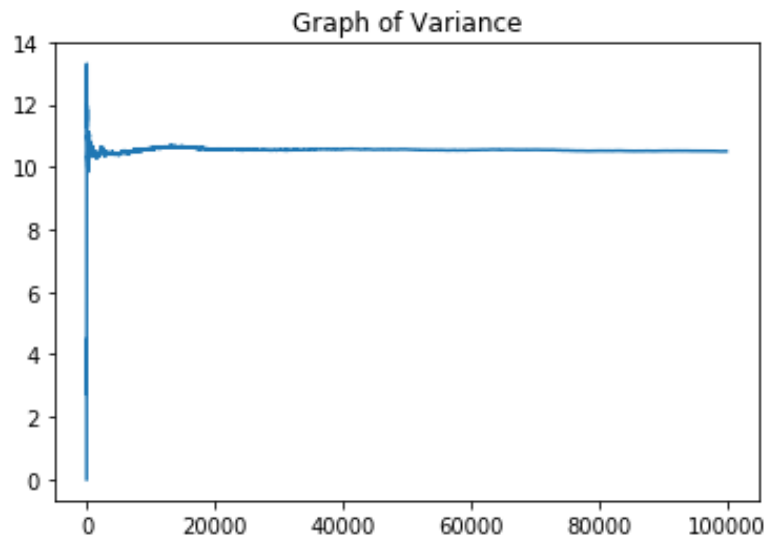
## Result Comparing



As you see, graph of X is similar with Pmf of X.



I found mean of X as 3.5 in my calculations and this graph is goes to 3.5 too.



I found variance of X as 10.41 in my calculations and this graph is similar with the calculations too.