

Related Problem with Solution :

Q) The mean and the variance of a random variable X having Binomial Distribution are 4 and 2 respectively then

Soln :

Given mean= 4

Variance= 2

$$\therefore np = 4$$

and $npq = 2$

$$\therefore 4q = 2, q = \frac{2}{4} = \frac{1}{2}$$

$$p = 1 - q = \frac{1}{2}$$

$$\therefore n(1/2) = 4; n = 8$$

Thus

$$\begin{aligned} p(X = 1) &= {}^8 C_1 \left(\frac{1}{2}\right) \left(\frac{1}{2}\right)^7 \\ &= 8 \left(\frac{1}{2}\right)^8 = \frac{8}{256} = \frac{1}{32} \end{aligned}$$