

How to calculate probability in Binomial distribution

(By Calculator):

Example 1: Binomial distribution $n=5, p=0.3, q=0.7$

$$X \sim \text{Binomial}(5, 0.3)$$

Find

1) $P(X \leq 2) = ?$

$$\sum_{x=0}^2 ({}^5C_x * (0.3)^x * (0.7)^{(5-x)})$$

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Diagram showing the mapping of terms in the binomial formula to calculator keys:

- 5C_x is mapped to **5C** (with a red arrow pointing to the 5C_x term).
- $(0.3)^x$ is mapped to **Alpha** (with a red arrow pointing to the $(0.3)^x$ term).
- $(0.7)^{(5-x)}$ is mapped to **Alpha** (with a red arrow pointing to the $(0.7)^{(5-x)}$ term).

To write the following in calculator :

Σ	\longrightarrow	Shift log
X	\longrightarrow	Alpha)
5C_2	\longrightarrow	5 shift \div 2

2) $P(X \geq 3) = ?$

$$\sum_{x=3}^5 ({}^5C_x * (0.3)^x * (0.7)^{(5-x)}) =$$

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