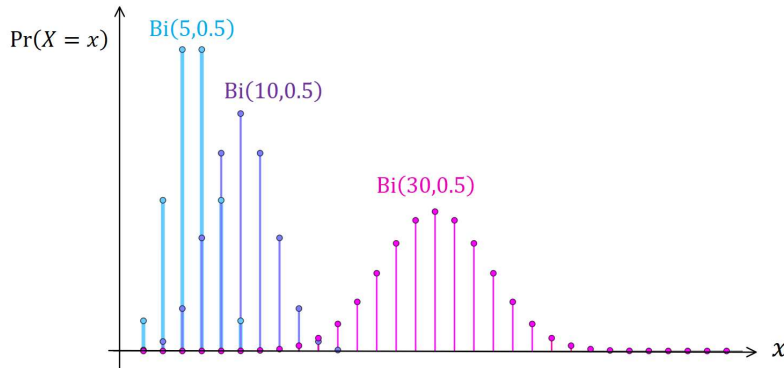


Parameters of Binomial Distributions

Effect of Variation of the Defining Parameters

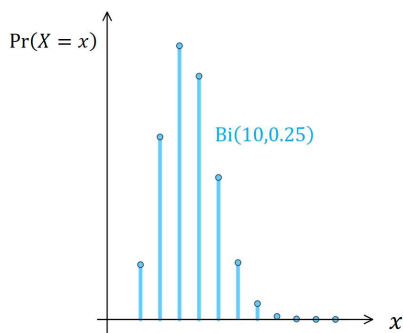
Effect of Variation of n

As the number of trials increases, the maximum probability decreases and variance increases. Graphically, increasing the number of trials squashes the graph vertically but expands the graph horizontally.

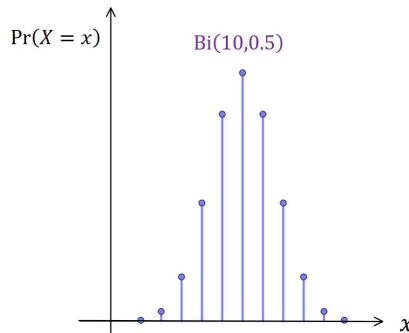


Effect of Variation of p

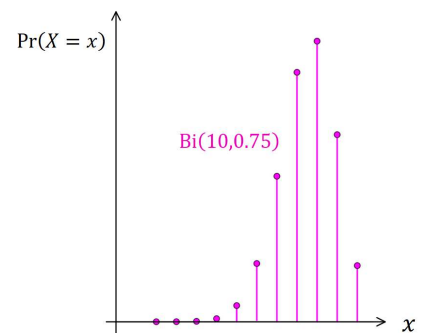
The value of the probability of success changes the skew of the probabilities. The higher the probability of success, the more the distribution skews to more successes. Likewise, the lower the probability of success, the more the distribution skews to less successes. A probability of success of 0.5 will create a symmetric distribution.



Positively Skewed $p < 0.5$



Symmetrical $p = 0.5$

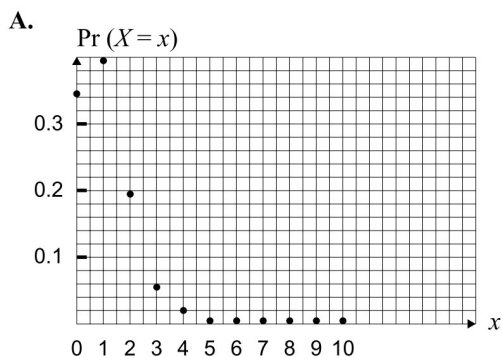


Negatively Skewed $p > 0.5$

Example VCAA 2001 Exam 1 Question 23

The shape of a binomial distribution of the random variable X with

Ten independent trials $X \sim \text{Bi}(10, 0.1)$
Probability of success for each trial being 0.1



Ten independent trials $X \sim \text{Bi}(10, 0.9)$
Probability of success for each trial being 0.9

