Special distributions for Quantitative R.V.

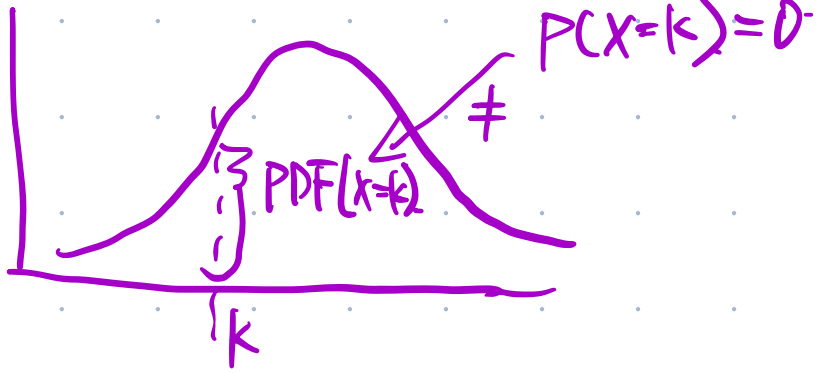
- Discrete R.V.
  - Binomial
  - Geometric
- Continuous R.V.
  - Uniform
  - Normal

PDF? CDF? E(X)? Std(X)?

P(X=k)=? P(X≤k)=? Shape: Skewness?

① Continuous R.V. PDF is meaningless.

1) PDF of continuous RV the height of the curve of corresponding point



2) the prob. of any given $X=k$, $P(X=k)$ is zero.

Binomial. (1) definition of X.

number of trials that succeeded in n trials.

Geometric. (1) definition of X.

the order of first success in a series of trials.

Binomial Setting difference.

total number of trials n.

$E(X) = \sum x_i p_i$ $\quad Std(X) = \sqrt{\sum (x_i - \mu_x)^2 p_i}$

Binomial

$E(X) = \mu_X = np$

$Std(X) = \sigma_X = \sqrt{np(1-p)}$

当 $np \geq 10$ 且 $n(1-p) \geq 10$ 时.

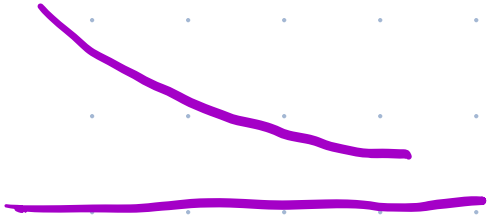
当 $np < 10$ 且 $p > 0$

Geometric

$E(X) = \mu_X = \frac{1}{p}$

$Std(X) = \sqrt{\frac{1-p}{p^2}}$

永之远



当 $n(1-p)\leq 10$ 且 $p\to 1$ 时