CHAPTER 16: PROBABILITY MODELS

Bernoulli Trials, if….: Random trials; 2 different types - _____

1. There are two possible outcomes (success & failure)
2. The probability of success is constant
3. The trials are independent

Geometric Probability Model	Binomial Probability Model
Appropriate for a random variable that counts the number of Bernoulli Trials until the 1st success	Appropriate for a random variable that counts the number of successes in a fixed number of Bernoulli trials
p = probability of success q = 1 – p (failures) $P(X = x) = q^{x-1}p$ Expected value: $\mu = \frac{1}{p}$ Standard Deviation: $\sigma = \sqrt{\frac{q}{p^2}}$	p = probability of success q = 1 – p (failures) n = number of trials $\binom{n}{k} p^k q^{k-1}$ or ${}_nC_k p^k q^{n-k}$ Expected value: $\mu = np$ Standard Deviation: $\sigma = \sqrt{npq}$
• geometpdf(p, x) • geometcdf(p, x)	• binompdf(n, p, x) • binomcdf(n, p, x)

At Least Problems **At Most Problems**