

Statistics
Fall 2021
Lecture 19



Class QZ 19

1) Consider a **geometric Prob. dist** with $p=0.8$,

Find $P(X \geq 4)$.

~~0.0000~~ ~~0.0000~~
3 4

Total Prob. \uparrow $= 1 - \text{geometcdf}(0.8, 3) = 0.003 \checkmark$

2) Consider a **Poisson Prob. dist** with $\mu = \lambda = 8$,

Find $P(X < 10) = P(X \leq 9) = \text{Poissoncdf}(8, 9) = 0.717 \checkmark$

Consider the population below

1, 3, 5, 7

Clear all lists 2nd + 4:ClearAllLists Enter

Reset all lists STAT Edit
5:SetupEditor Enter

Store this data in L1

Find μ , σ , and σ^2 (exact)

STAT Edit L1
1:Edit
1
3
5
7

$\mu = \bar{x} = 4$

$\sigma = \sqrt{x} = 2.236$

STATS → CALC
1:1-VarStats

VARS 5:Statistics 4: σ_x x^2 Enter $\sigma^2 = 5$

Let's take all samples of size 2 with replacement from this Population.

Now, find \bar{x} of each sample

Sample			
1	2	3	4
2	3	4	5
3	4	5	6
4	5	6	7

16 \bar{x}

\bar{x}	$P(\bar{x})$
1	1/16
2	2/16
3	3/16
4	4/16
5	3/16
6	2/16
7	1/16

Prob. dist. Histogram

Normal Curve

$\bar{x} \rightarrow L2, P(\bar{x}) \rightarrow L3$

L2	L3
1	1/16
2	2/16
3	3/16
⋮	⋮

STAT CALC 1-VarStats L2 & L3
 $\mu = 4$ now find σ^2 in reduced fraction
 $\sigma = 1.581$ $\sigma^2 = \frac{5}{2}$

to the right side of study guides 18-22
 look for UniForm Prob. Dist video,
 watch it and make notes. Your HW tonight