Probability and Statistics I

STAT 3600 – Fall 2021

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Last updated on

July 4, 2021

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Chapter 5. Distributions of Functions of Random Variables

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For sufficiently large n the binomial distribution, $b(n, p)$ can be approximated by normal distribution $N(np, np(1-p))$.

The rule for "sufficiently large" is

$$np \geq 5 \quad \text{and} \quad n(1-p) \geq 5.$$

Example 5.7-1 Let Y be $b(36, 1/2)$. Find $\mathbb{P}(12 < Y \leq 18)$, approximately.

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Ans. ≈ 0.5329 and the exact answer is 0.5334.