

## MTH 210: Lab 2

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**P 1.** Use the inverse transformation method to generate  $10^4$  samples from

- (1) Bernoulli( $1/2$ ), Poisson(4), Binomial(10,  $1/3$ ).
- (2) For each distribution given above, calculate the sample mean and sample variance and compare with the population mean and variance.

**P 2.** Define  $N = \lfloor \log(U) / \log(1 - p) \rfloor$  where  $U \sim \text{Uniform}(0,1)$  and  $0 < p < 1$ . Generate  $10^4$  samples of  $N$  and calculate sample mean and sample variance.