Section 1 graded:

Problems from Devore: Section 4.3:

$$28, 29, 36, 37, 47$$

Problem 100, page 179, parts a-d. Problem 107 page 180, parts a-c. Problem 123. on page 182 (you will need to look up the definition of an exponential distribution).

Credit / No Credit

Let $F(t)$ denote the CDF of a random variable Z.

1. What is the CDF of the random variable $F(Z)$?

2. Suppose you have a random number generator capable of generating random numbers uniformly in $[0, 1]$. That is, you have a random variable W which has Unif[0,1] distribution. Describe how you could generate a random variable Y where Y has Unif[a,b] distribution.

3. Describe how to generate a random variable whose distribution is $N(\mu, \sigma^2)$.
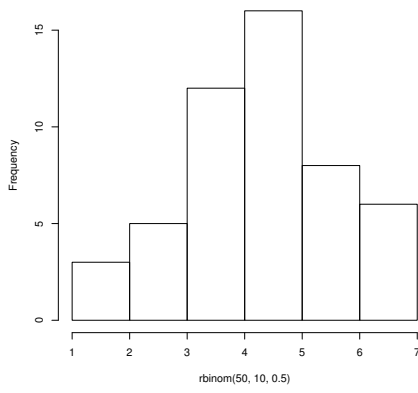
In case you don't have the handout from class:
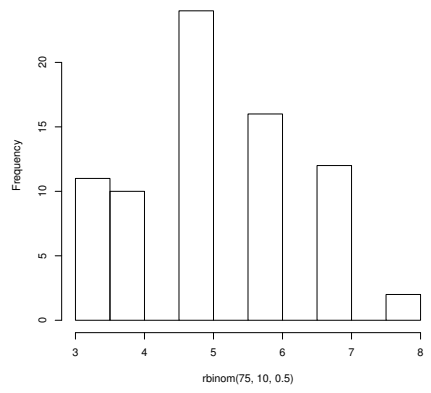
Histogram of rbinom(5, 10, 0.5)
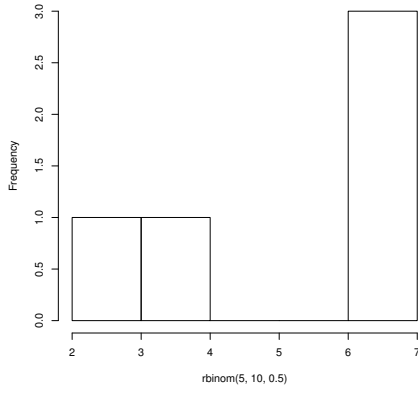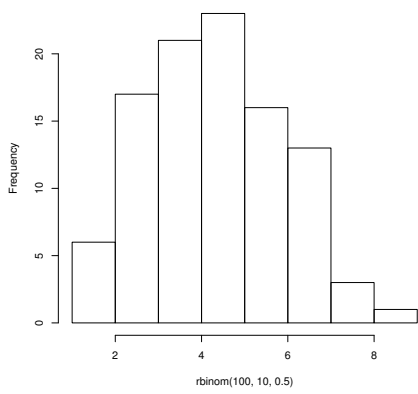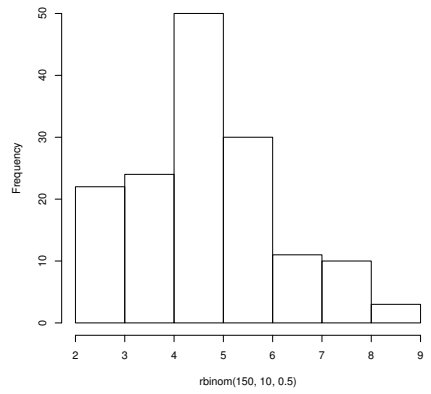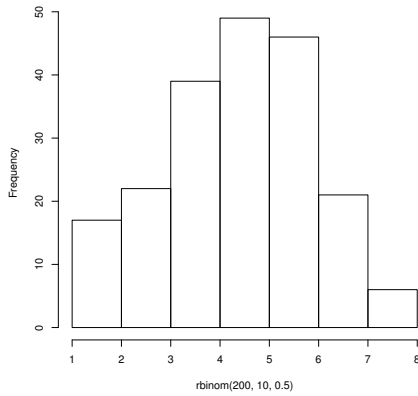
Histogram of rbinom(10, 10, 0.5)
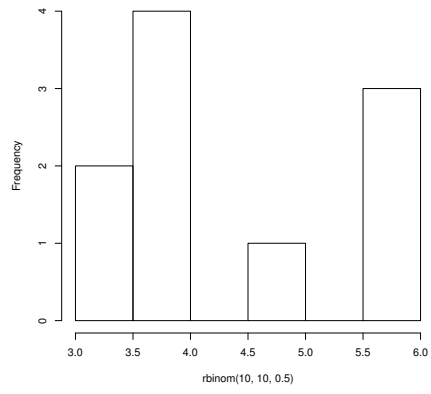
Histogram of rbinom(50, 10, 0.5)
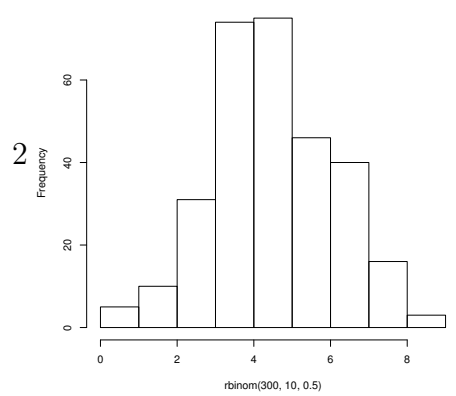
Histogram of rbinom(75, 10, 0.5)

Histogram of rbinom(100, 10, 0.5)

Histogram of rbinom(150, 10, 0.5)

Histogram of rbinom(200, 10, 0.5)
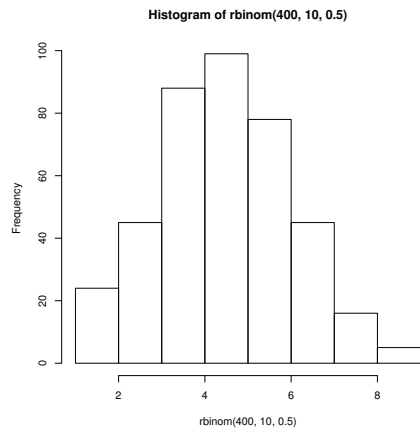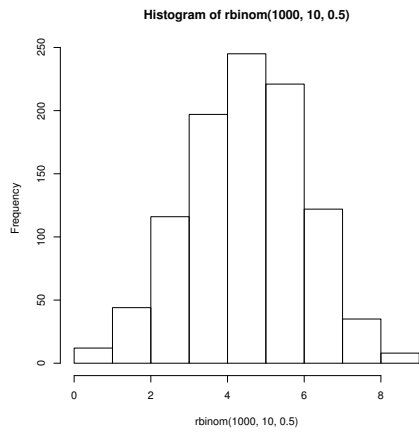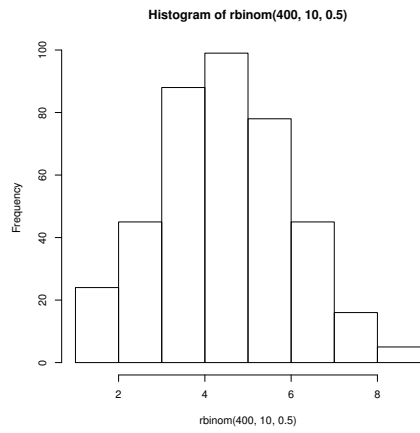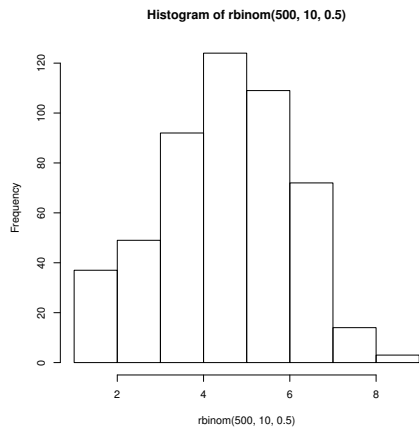
Histogram of rbinom(300, 10, 0.5)

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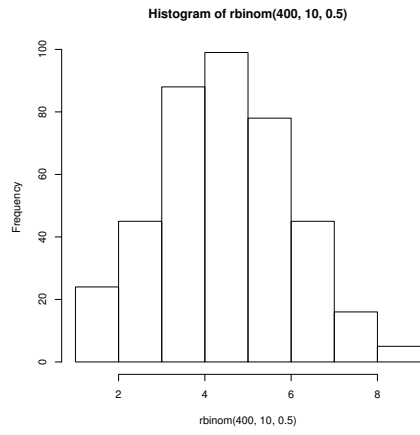## Histogram of rbinom(400, 10, 0.5)

Histogram of rbinom(400, 10, 0.5)

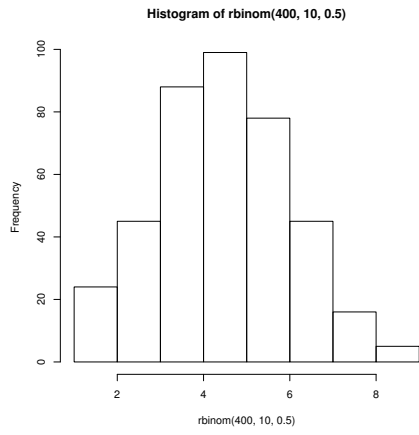## Histogram of rbinom(500, 10, 0.5)

Histogram of rbinom(400, 10, 0.5)

Histogram of rbinom(1000, 10, 0.5)
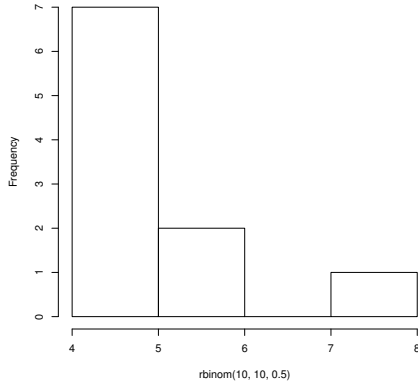

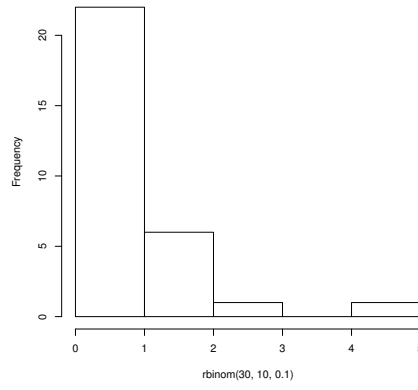## Histogram of rbinom(400, 10, 0.5)
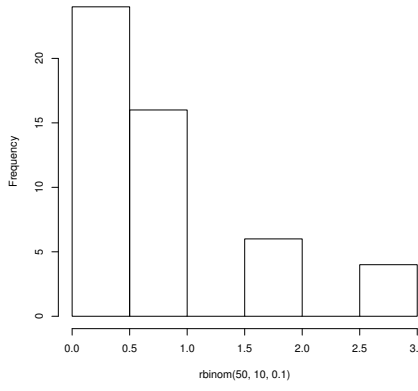

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Histogram of rbinom(10000, 10, 0.5)
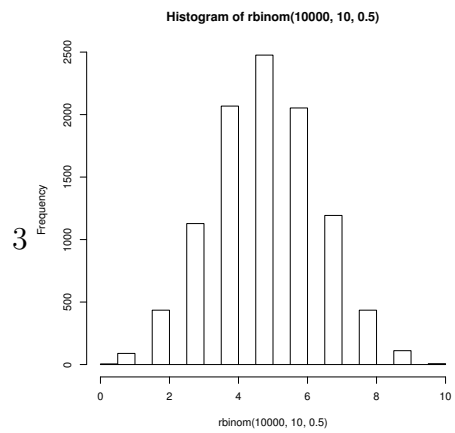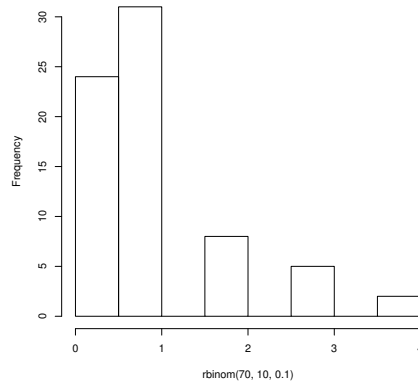
Histogram of rbinom(10, 10, 0.5)
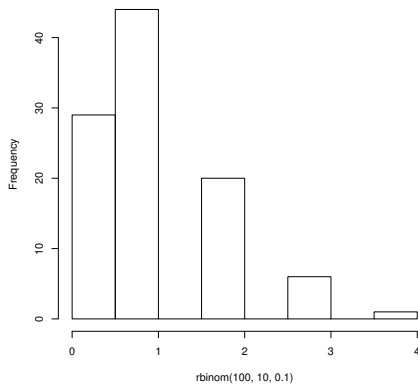
Histogram of rbinom(30, 10, 0.1)
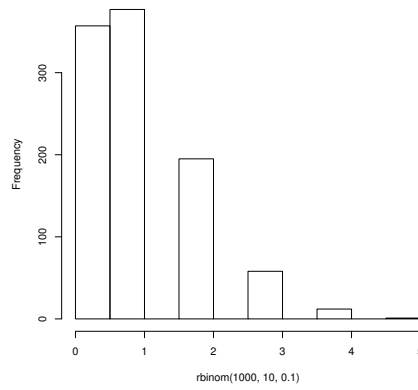
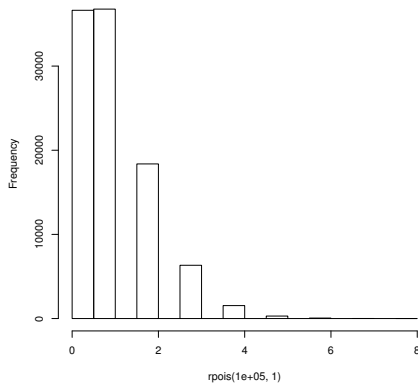Histogram of rbinom(50, 10, 0.1)

Histogram of rbinom(70, 10, 0.1)

Histogram of rbinom(100, 10, 0.1)

Histogram of rbinom(1000, 10, 0.1)

Histogram of rpois(1e+05, 1)

Histogram of rpois(1e+05, 2)

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Histogram of rpois(1e+05, 4)

Histogram of rpois(1e+05, 5)

Histogram of rpois(1e+05, 10)

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