Assignment-4

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1 Question 1

Code for R

```r
#taking 3 p randomly.
q <- c(0.5, 0.8, 0.25)

#no of random numbers
n <- 50

u <- runif(n)

for (i in 1:3)
{
    r <- as.integer(log(u)/log(q[i])) + 1
    print(1-q[i])
    print(r)
    hist(r, main=paste("Geometric Distribution for about 50 values with p = ", 1-q[i]) , xlab="
        Range of random numbers", ylab="Density", breaks=50)
    if(i == 1)
        dev.copy(png, "plot1_1.png")
    if(i == 2)
        dev.copy(png, "plot1_2.png")
    if(i == 3)
        dev.copy(png, "plot1_3.png")
    dev.off()
}
```
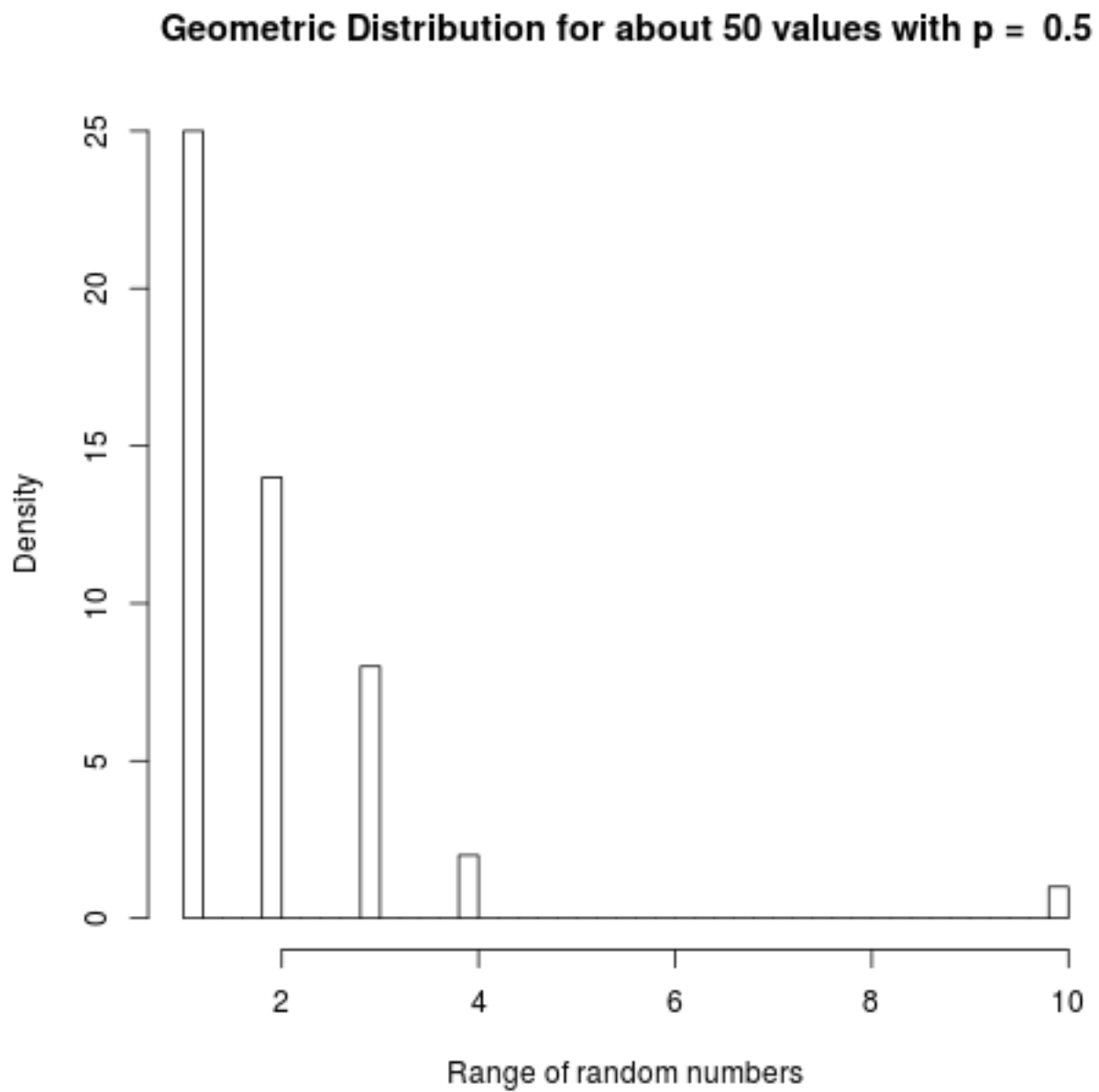
Geometric Distribution

p = 0.5

Values

5 2 1 3 1 1 3 2 1 1 2 3 2 2 1 1 3 2 1 3 1 1 3 1 1 2 2 1 1 1 2 1 2 1 1 1 1 2 2 1 1 5 1 1 4 1 1 1 3 3
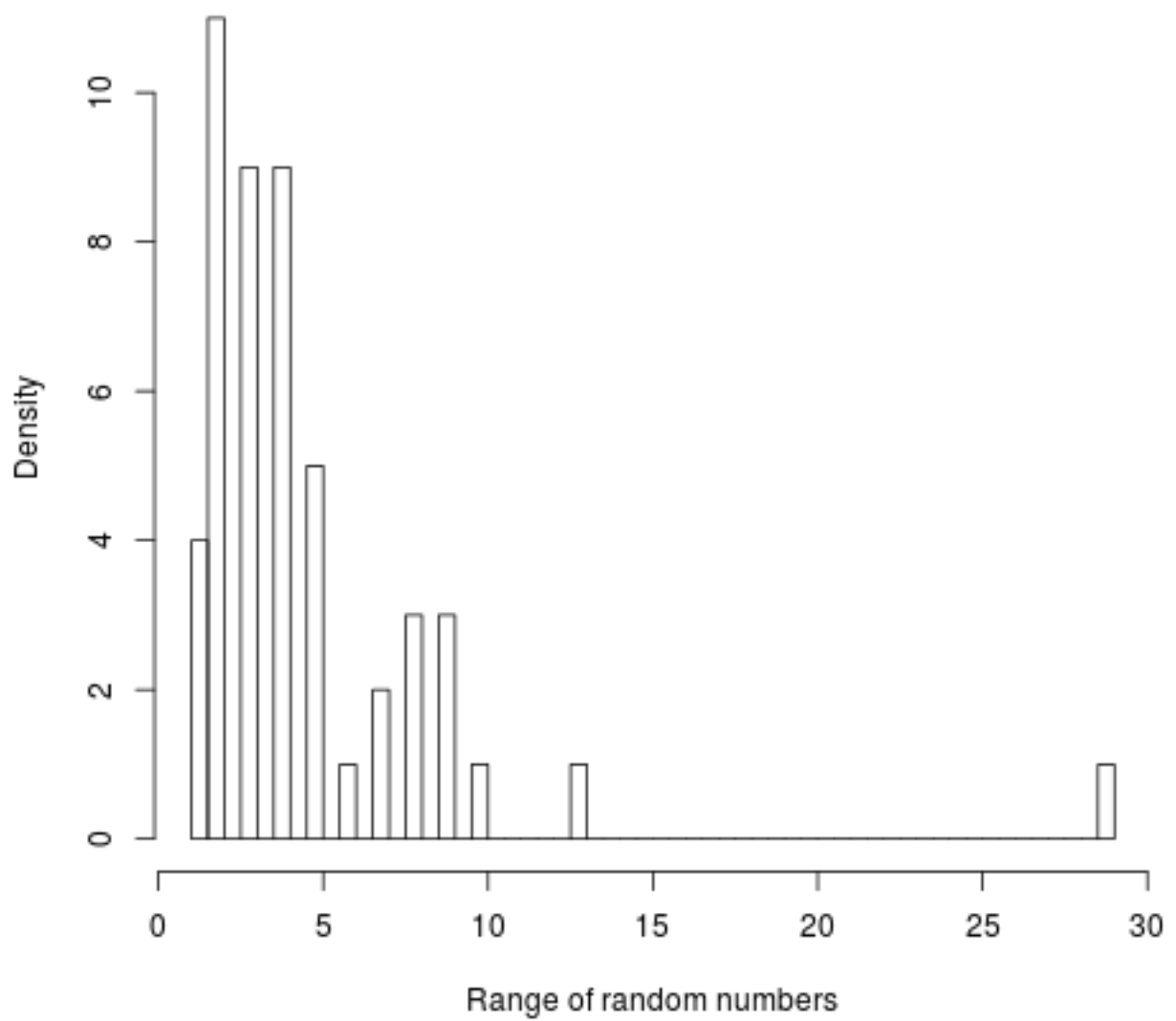
Geometric Distribution for about 50 values with p = 0.5

p = 0.2

Values

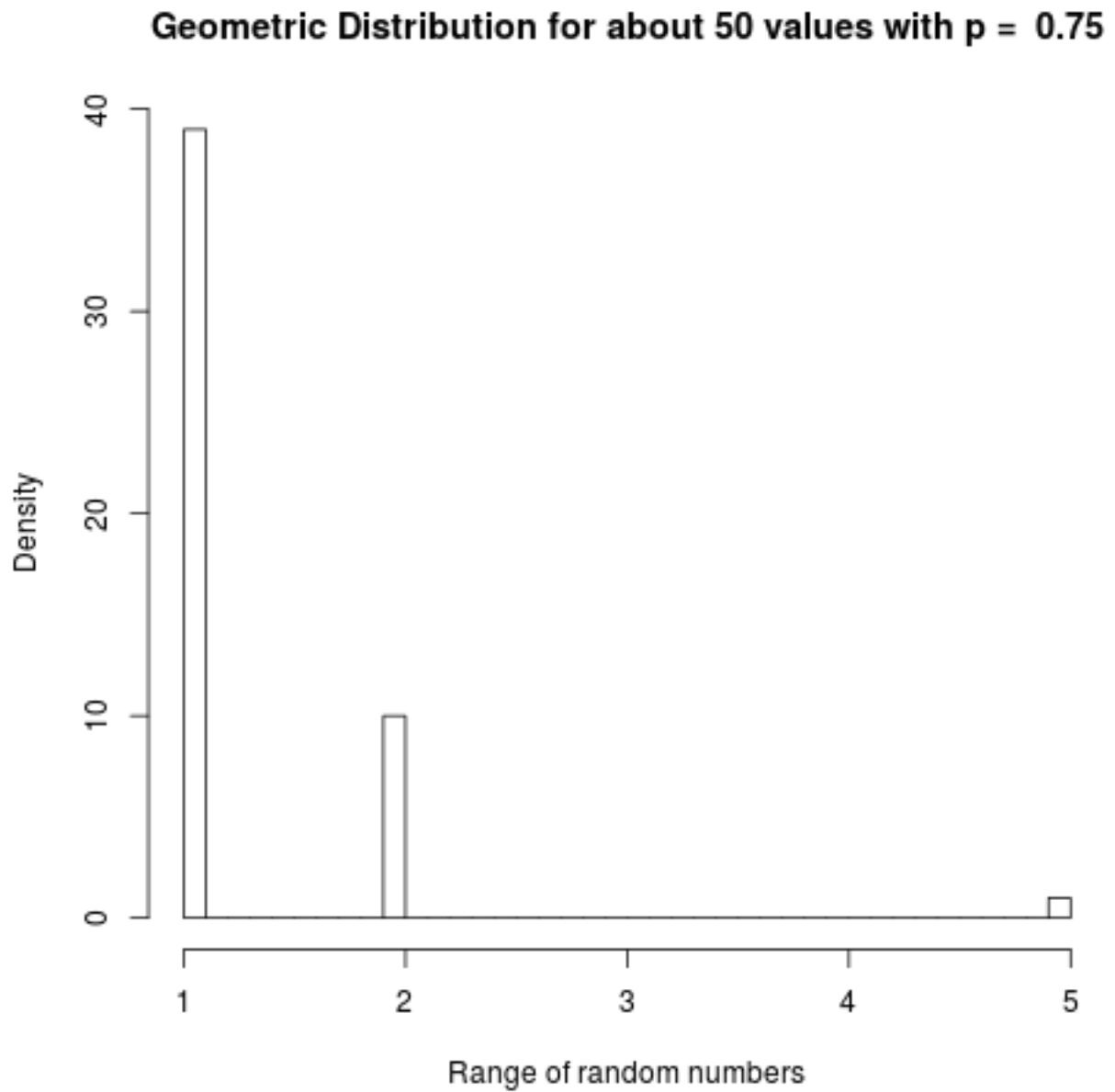14 5 1 8 1 1 8 7 3 3 5 7 4 5 3 3 10 4 2 7 3 2 8 1 2 4 5 2 1 2 4 1 5 3 1 2 2 5 4 2 1 14 1 2 13 3 3 2 9 8

Geometric Distribution for about 50 values with p = 0.2

p = 0.75 Values

3 1 1 2 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 3 1 1 2 1 1 1 2 2

Geometric Distribution for about 50 values with p = 0.75

2   Question 2

Code for R