Binomial #

```
dbinom(4, size=12, prob=0.2)
                               + dbinom(0, size=12, prob=0.2)
                             + dbinom(1, size=12, prob=0.2) +
                             + dbinom(2, size=12, prob=0.2) +
                             + dbinom(3, size=12, prob=0.2) +
                               dbinom(4, size=12, prob=0.2) +
                     pbinom(4, size=12, prob=0.2) # cumulative
           ****
    .Create a sample of 50 numbers which are incremented by 1 #
                                        x < - seq(0, 50, by = 1)
                           .Create the binomial distribution #
                                        y < - dbinom(x, 50, 0.5)
                                .Give the chart file a name #
                                     png(file = "dbinom.png")
                            .Plot the graph for this sample #
                                                   plot(x,y)
                                            .Save the file #
                                                   ()dev.off
                                Probability of getting 26 or less heads from a 51 tosses of a #
                                                       .coin
                                       (26,51,0.5)x <- pbinom
                                                    print(x)
Find 8 random values from a sample of 150 with probability of #
                                                        .0.4
                                        (4..8,150) x <- rbinom
                                                          Х
```

Density Plots

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Plotting the probability density function (pdf) of a Normal #
                                                     : distribution
                                                         () x11
                                         (1..4.5, 4.5-) \times < - seq
                          normdensity <- dnorm(x,mean=0,sd=1)</pre>
                                 plot(x,normdensity,type="l")
      Plotting the probablity mass function (pmf) of a Binomial #
                                                     : distribution
                                            par(mfrow=c(2,1))
                                                  (1:30)k <- c
                 plot(k,dbinom(k,size=30,prob=.15),type="h")
                  plot(k,dbinom(k,size=30,prob=.4),type="h")
                                            par(mfrow=c(1,1))
 Discrete Probabilities For a discrete random variable, you can #
                         $use the probability mass to find $P(X=k)
                                   dbinom(3, size=10, prob=0.5)
                                         n <- 6; p<- 0.6; x <- 0:n
                                                      dbinom(x,n,p)
                             :n=3; p=.7; x=0:n; prob=dbinom(x,n,p)
         barplot(prob,names.arg = x,main="Binomial Barplot\n(n=3,
                                         p=0.7)", col="lightgreen")
.calculates Cumulative probabilities of binomial or CDF (P(X \le x))
                                                        :Example 1#
                                            (0,2,5,7,8,12,13)x <- c
                                         pbinom(x,size=20,prob=.2)
  Example 2: Dravid scores a wicket on 20% of his attempts when #
he bowls. If he bowls 5 times, what would be the probability that
                                     She scores 4 or lesser wicket
The probability of success is 0.2 here and during 5 attempts we #
                                                                get
                                        pbinom(4, size=5, prob=.2)
Example 3: 4% of Americans are Black. Find the probability of 2 #
black students when randomly selecting 6 students from a class of
                                          .100 without replacement
                             When R: x = 4 R: n = 6 R: p = 0.04#
```

(4,6,0.04)pbinom

(30,5,0.5)rbinom (30,5,0.5)rbinom