

Negbin_plot.R

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```
# Negbin_plot.R  
# Plot probabilities for the negative binomial distribution  
  
# Load necessary libraries  
library(ggplot2)  
  
# Negative binomial parameters here  
m <- 5  
k <- 10  
  
# Negative binomial distribution function  
ymax <- 20  
y <- 0:ymax  
proby <- dnbinom(y,size=k,mu=m)  
  
# Make data frame for ggplot2  
nbdata <- as.data.frame(cbind(y,proby))  
  
# Print data  
nbdata
```

```
##      y      proby  
## 1  0 1.734153e-02  
## 2  1 5.780510e-02  
## 3  2 1.059760e-01  
## 4  3 1.413014e-01  
## 5  4 1.530765e-01  
## 6  5 1.428714e-01  
## 7  6 1.190595e-01  
## 8  7 9.071198e-02  
## 9  8 6.425432e-02  
## 10 9 4.283621e-02  
## 11 10 2.712960e-02  
## 12 11 1.644218e-02  
## 13 12 9.591273e-03  
## 14 13 5.410462e-03  
## 15 14 2.962872e-03  
## 16 15 1.580198e-03  
## 17 16 8.230200e-04  
## 18 17 4.195788e-04  
## 19 18 2.097894e-04  
## 20 19 1.030544e-04  
## 21 20 4.980965e-05
```

```
# Generate plot showing frequencies
ggplot(npdata,aes(y,proby))+
geom_bar(stat="identity",width=0.05,fill="red")+
geom_point(color="red",size=3)+
ggtitle("Negative binomial distribution, m = 5, k = 5")
```

