

1. Write a `pois.prob()` function that computes $P(X = x)$, $P(X \neq x)$, $P(X < x)$, $P(X \leq x)$, $P(X > x)$, and $P(X \geq x)$. Enable the user to specify the rate parameter λ .

```
pois.prob <- function(x, lambda, type="<="){  
  # Use dpois and ppois to conditionally return the correct probability  
  
  if (type == "<=") {  
    p = ppois(x, lambda)  
  }else if (type == "<") {  
    p = ppois(x-1, lambda)  
  }else if (type == "=") {  
    p = dpois(x, lambda)  
  }else if (type == "!=") {  
    p = 1 - dpois(x, lambda)  
  }else if (type == ">=") {  
    p = 1 - ppois(x, lambda)  
  }else {  
    p = 1 - ppois(x+1, lambda)  
  }  
  return(p)  
}
```

2. Write a `beta.prob()` function that computes $P(X = x)$, $P(X \neq x)$, $P(X < x)$, $P(X \leq x)$, $P(X > x)$, and $P(X \geq x)$ for a beta distribution. Enable the user to specify the shape parameters α and β .

```
beta.prob <- function(x, size, prob, type="<="){  
  # Use dbeta and pbeta to conditionally return the correct probability  
}
```