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, a, b, type="<="){
  # Use dbeta and pbeta to conditionally return the correct probability

  if (type == "<=" | type == "<") {
    p = pbeta(x, a, b)
  }else if (type == "=") {
    p = 0
  }else if (type == "!=") {
    p = 1
  }else {
    p = 1 - pbeta(x, a, b)
  }
  return(p)
}
```