1. You can create your own functions in R. These are created using the `function` command. For example, we can design our own function to calculate mean.

```
> MYMEAN = function(x) { sum(x)/length(x)}
```

Then you can say

```
> x = c(1,2,3)
> MYMEAN = function(x) { sum(x)/length(x)}
> MYMEAN(x)


[1] 2
```

A function in R is another object, with the class `function`. It typically will return the last value computed in the body. Compute the output of `MYMEAN` for

```
> x = 1:100
> y = x[x<50 | x >2]
```

2. Suppose roll a fair die two times and let X_1 and X_2 be denote outcomes on each of the rolls. Let $Y = X_1 + X_2$.
   (a) Find the Range of Y
   (b) For each $y \in Y$, find the $f_Y(y) = P(Y = y)$.
   (c) Write an `R`-function that returns $f_Y(\cdot)$ for any given value y in Range of Y.

3. Suppose roll a fair die once and let X denote the outcome. Then we toss a biased coin, with $0 < p < 1$ being probability of obtaining heads, X times. Let Y denote the number of heads in X tosses.
   (a) Find the Range of Y
   (b) For each $y \in Y$, find the $f_Y(y) = P(Y = y)$.
   (c) Write an `R`-function that returns $f_Y(\cdot)$ for any given value y in Range of Y.