

# Assignment\_6

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2023-11-08

## R Markdown

#1 ## 1.1 Q1 ##

### 1.1 Q2

$P(X=0)=1-0.5=0.5$  That is, the probability of taking the value 0 is 0.5.

$P(X=3)=0.25$  That is, the probability of taking the value 3 is 0.25.

$P(X=10)=0.25$  That is, the probability of taking the value 10 is 0.25.

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
## v dplyr      1.1.3      v readr      2.1.4
## v forcats    1.0.0      v stringr   1.5.0
## v ggplot2    3.4.3      v tibble    3.2.1
## v lubridate  1.9.3      v tidyr     1.3.0
## v purrr      1.0.2
```

```
## -- Conflicts ----- tidyverse_conflicts() --
```

```
## x dplyr::filter() masks stats::filter()
```

```
## x dplyr::lag()     masks stats::lag()
```

```
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
set.seed(0)
```

```
n <- 1000
```

```
sample_X <- data.frame(U=runif(n)) %>%
```

```
mutate(X=case_when( (0<=U)&(U<0.25)~3, (0.25<=U)&(U<0.5)~10, (0.5<=U)&(U<=1)~0)) %>%
```

```
pull(X)
```