TP6

R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
dice <- function(faces=6,n=100)
{
  sample(x = seq(from = 1, to = faces, by = 1),size=n, replace=TRUE);
}
# génère 10 tirages d'un dé à 6 faces
dice(6,471)
```

```
##   [1] 3 3 6 2 2 6 3 2 1 6 3 6 2 3 4 6 4 3 2 1 5 5 6 2 2 1 2 4 6 3 6 5 4 1 4
##  [36] 6 5 4 5 4 1 6 5 3 6 2 1 2 1 1 1 3 6 4 3 3 2 2 2 5 1 1 2 5 5 5 4 6 2 4
##  [71] 1 6 3 4 6 2 5 4 1 6 1 6 6 5 1 2 6 6 5 1 3 2 2 4 6 2 1 1 2 5 4 2 2 1 2
## [106] 5 4 2 3 1 2 4 4 2 4 1 1 4 2 5 3 1 1 6 3 2 6 2 1 5 2 5 2 3 2 3 5 1 1 2
## [141] 3 1 4 4 4 4 1 5 1 3 5 5 1 5 5 3 2 6 1 1 3 5 3 3 6 5 5 5 1 4 3 2 4 6 4
## [176] 2 5 4 1 2 4 1 2 2 3 2 6 2 6 3 4 2 3 5 4 4 4 2 6 4 3 3 6 3 3 5 1 2 1 1
## [211] 1 2 2 2 3 2 3 2 1 1 4 2 5 6 3 5 2 3 6 4 4 2 4 2 6 4 4 6 6 4 1 5 4 5 4
## [246] 6 1 5 4 4 2 6 3 5 3 2 6 3 3 2 4 3 2 1 3 6 3 6 3 4 4 4 1 3 6 3 1 4 3 4
## [281] 5 5 5 1 5 6 6 6 1 4 1 4 1 2 1 5 3 4 3 3 1 5 6 3 6 1 5 3 2 6 5 3 5 1 2
## [316] 1 3 1 1 4 1 5 5 5 1 3 3 3 1 6 2 2 6 2 4 6 5 4 3 1 1 5 5 3 5 1 5 4 3 2
## [351] 4 3 6 4 6 6 4 1 1 6 3 6 1 4 3 2 2 3 6 5 6 6 2 5 2 2 2 2 5 1 5 4 4 1 1
## [386] 3 2 3 5 5 2 1 6 2 2 3 3 3 1 1 4 4 2 5 3 5 1 1 2 1 1 4 6 2 3 3 2 3 2 4
## [421] 6 4 5 3 2 5 6 5 2 6 3 5 2 3 3 1 2 1 6 1 2 4 3 3 5 2 1 1 3 1 3 1 4 1 4
## [456] 6 3 5 2 1 6 1 3 1 6 2 4 6 1 2 3
```

Including Plots

You can also embed plots, for example:

```
library(dplyr);
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(magrittr);
experiment <- function(faces = 6, n = 100)
{
  dice1 <- dice(faces,n);
  dice2 <- dice(faces,n);
  dice3 <- dice(faces,n);
```

```
  data.frame(Dice1 = dice1,
             Dice2 = dice2,
             Dice3 = dice3);
}
# génère une expérience de 5 tirages de 3 dés à 6 faces
experiment(6,100000) %>%
mutate(Som = Dice1 + Dice2 + Dice3) %>%
  group_by(Som)%>%
  summarize(N=n());
```

```
## # A tibble: 16 × 2
##      Som     N
##    <dbl> <int>
## 1      3   424
## 2      4  1385
## 3      5  2771
## 4      6  4541
## 5      7  6861
## 6      8  9666
## 7      9 11614
## 8     10 12640
## 9     11 12454
## 10    12 11709
## 11    13  9724
## 12    14  7037
## 13    15  4597
## 14    16  2711
## 15    17  1419
## 16    18   447
```

```
#calcule le nombre d'occurences de chaque valeur possible de somme
```

```
library(dplyr);
library(magrittr);
experiment <- function(faces = 6, n = 100)
{
  dice1 <- dice(faces,n);
  dice2 <- dice(faces,n);
  dice3 <- dice(faces,n);

  data.frame(Dice1 = dice1,
             Dice2 = dice2,
             Dice3 = dice3);
}
# génère une expérience de 5 tirages de 3 dés à 6 faces
experiment(6,100000) %>%
  mutate(Som = Dice1 + Dice2 + Dice3) %>%
  group_by(Som)%>%
  summarize(N=n())%>%
  filter((Som == 9)|(Som == 10));
```

```
## # A tibble: 2 × 2
##     Som     N
##   <dbl> <int>
```

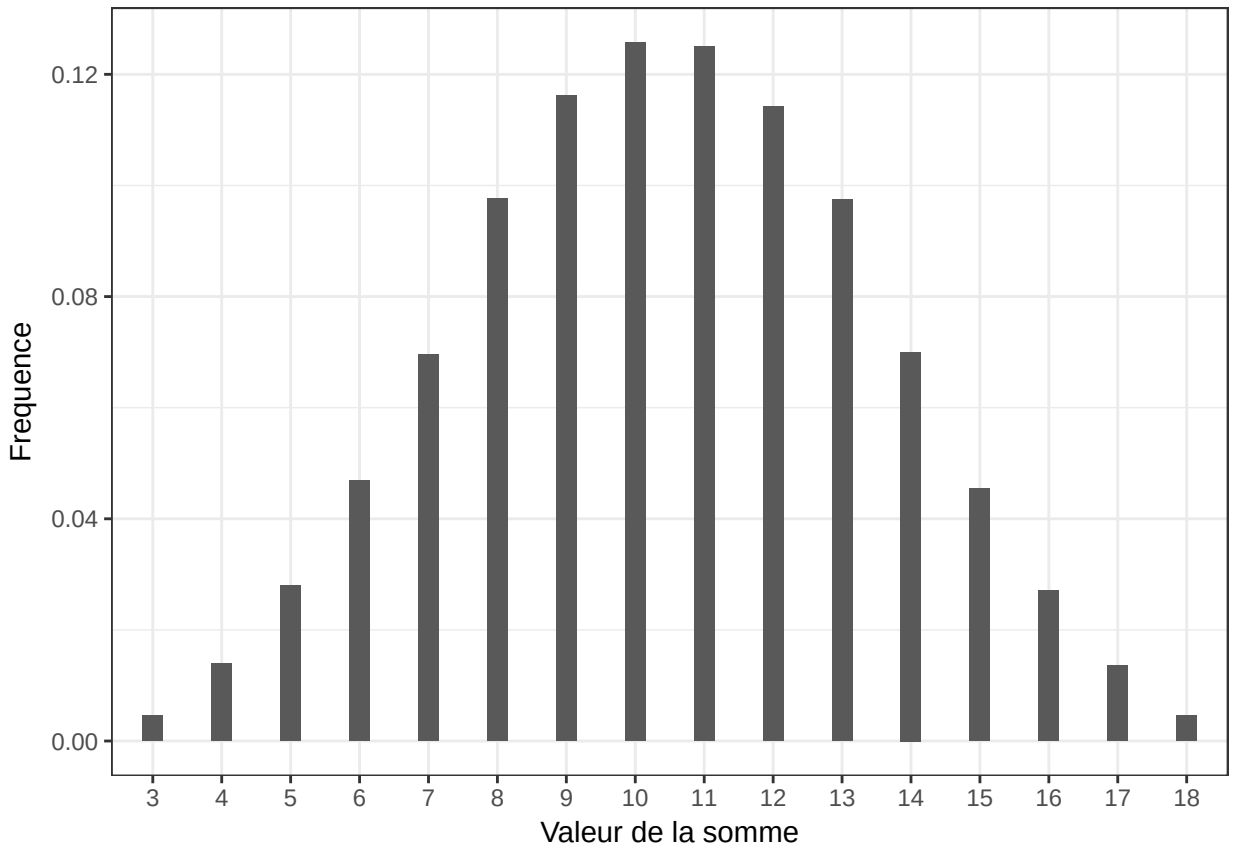
```
## 1     9 11656
## 2    10 12569
```

```
#calcule le nombre d'occurences de chaque valeur possible de somme
```

```
library(dplyr);
library(magrittr);
library(ggplot2);

experiment <- function(faces = 6, n = 100)
{
  dice1 <- dice(faces,n);
  dice2 <- dice(faces,n);
  dice3 <- dice(faces,n);

  data.frame(Dice1 = dice1,
             Dice2 = dice2,
             Dice3 = dice3);
}
# génère une expérience de 5 tirages de 3 dés à 6 faces
experiment(6,100000) %>%
  mutate(Som = Dice1 + Dice2 + Dice3) %>%
  ggplot(aes(x=as.factor(Som)))+
    geom_bar(aes(y=(..count..)/sum(..count..)),width=.3) + xlab("Valeur de la somme") + ylab("Frequence
    ylim(0,NA)+
    theme_bw();
```



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that

generated the plot.