ESTATÍSTICA

```
idades <- sample(c(18:75), 1000, replace = TRUE)
```

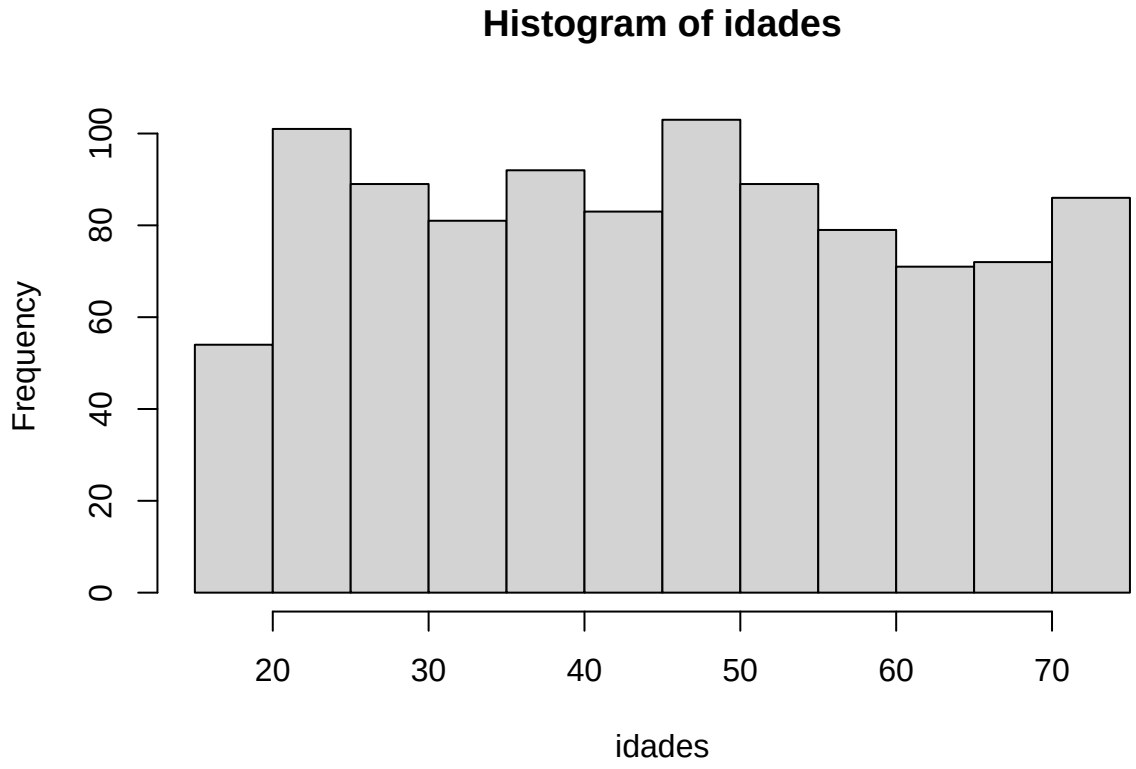
```
idades
```

```
##    [1] 45 33 33 28 69 69 54 48 72 35 63 19 24 55 52 22 57 28 27 66 63 31 46 58
##   [25] 60 18 25 58 23 30 58 24 40 37 37 40 74 48 45 23 74 25 24 55 40 44 59 39
##   [49] 63 27 70 65 62 61 21 35 54 61 52 49 74 53 27 40 70 22 23 39 75 32 54 24
##   [73] 43 57 53 36 60 69 54 47 25 45 47 50 19 61 50 63 47 71 60 49 18 68 60 47
##   [97] 31 24 25 29 32 25 40 19 37 75 49 60 70 32 71 26 53 70 73 69 24 75 74 47
##  [121] 23 39 34 36 52 64 46 71 36 54 28 46 67 64 61 72 48 72 61 59 49 26 40 56
##  [145] 66 30 56 39 44 40 63 39 55 22 50 51 27 26 40 42 62 38 71 35 18 70 65 42
##  [169] 19 45 58 53 36 57 75 22 56 26 23 18 35 28 51 40 49 24 61 54 33 22 24 31
##  [193] 71 50 69 75 59 35 42 60 64 51 32 50 27 53 72 57 29 19 72 35 53 45 29 37
##  [217] 61 26 46 65 45 51 65 39 25 50 34 20 26 49 52 32 60 47 21 35 54 20 35 49
##  [241] 54 33 30 49 52 29 24 69 73 30 25 27 54 38 48 37 33 36 62 24 54 20 50 33
##  [265] 33 25 37 51 56 41 55 21 35 27 19 52 32 68 53 44 20 64 64 52 31 36 21 45
##  [289] 19 49 46 65 54 30 30 62 74 21 71 23 28 70 74 49 70 20 60 53 20 25 44 36
##  [313] 32 75 61 74 34 41 32 36 64 73 48 67 61 18 54 22 66 59 55 30 75 50 75 35
##  [337] 34 20 26 49 40 57 50 47 70 63 66 46 53 57 44 42 62 44 24 27 74 23 49 38
##  [361] 43 60 34 47 25 75 54 66 62 22 43 56 60 75 29 56 40 61 18 46 23 47 40 40
##  [385] 25 54 74 54 50 32 44 30 57 44 50 36 53 43 73 53 67 69 59 46 44 73 20 28
##  [409] 73 24 48 33 53 19 19 46 54 23 28 61 44 63 31 69 72 57 20 34 64 39 40 38
##  [433] 75 71 56 50 52 20 60 22 49 51 57 39 70 39 57 65 31 30 27 74 27 40 36 52
##  [457] 33 74 74 58 50 63 75 70 65 29 35 71 36 70 20 36 41 46 75 41 59 26 62 18
##  [481] 51 55 24 44 32 40 42 28 60 50 64 35 24 67 24 75 73 52 56 29 70 53 19 72
##  [505] 73 38 45 69 30 25 74 54 35 46 39 49 29 71 34 59 60 46 39 45 45 50 36 63
##  [529] 23 35 73 44 41 25 57 39 32 34 41 20 68 55 28 30 25 50 73 44 38 30 66 37
##  [553] 21 59 67 67 61 51 18 44 69 58 27 19 47 67 29 26 45 24 35 51 69 24 27 64
##  [577] 46 47 21 70 59 57 67 72 22 34 60 21 57 50 61 33 62 46 48 22 35 48 35 53
##  [601] 18 20 30 57 55 25 64 66 65 41 46 22 40 28 23 21 69 71 44 31 20 27 23 73
##  [625] 30 34 69 46 36 49 67 63 74 74 42 42 41 53 31 28 31 57 24 43 41 68 23 21
##  [649] 27 26 74 58 58 75 25 26 45 64 26 72 41 65 41 45 58 40 72 47 29 65 40 69
##  [673] 36 25 19 58 41 25 65 54 18 20 31 46 40 70 19 22 19 43 72 73 36 25 20 22
##  [697] 22 47 73 70 50 54 23 51 56 48 24 75 72 52 36 40 29 72 65 39 38 33 58 21
##  [721] 61 67 65 33 40 60 38 63 39 34 29 59 20 52 56 50 42 70 75 46 62 35 66 48
##  [745] 53 71 57 75 45 43 54 49 58 70 65 53 29 35 66 73 69 36 42 23 24 32 35 46
##  [769] 71 41 37 52 23 19 48 23 31 44 26 60 59 34 23 64 39 27 30 41 47 56 51 23
##  [793] 19 20 37 73 43 32 51 23 46 19 36 61 33 42 75 27 50 19 28 55 67 24 36 53
##  [817] 28 45 51 37 59 44 22 48 49 65 25 66 50 41 66 53 56 62 59 28 66 35 42 40
##  [841] 44 26 19 55 28 24 24 32 70 28 59 23 36 62 23 37 67 60 48 51 21 69 23 47
##  [865] 71 19 48 55 26 72 56 47 62 49 23 51 61 70 19 27 28 36 46 73 44 58 48 28
##  [889] 67 35 51 32 29 54 41 41 55 53 56 28 71 52 50 37 44 71 46 50 48 32 71 26
##  [913] 30 74 22 35 33 39 19 63 41 75 45 28 66 18 23 37 32 56 70 52 58 44 70 45
##  [937] 49 69 66 23 59 37 39 66 20 19 58 30 37 22 45 64 45 29 37 34 39 41 74 61
##  [961] 38 29 58 46 45 69 67 39 34 29 48 50 25 52 22 49 26 39 44 51 65 31 23 41
##  [985] 49 51 55 26 31 45 72 39 61 73 46 37 52 18 46 44
```

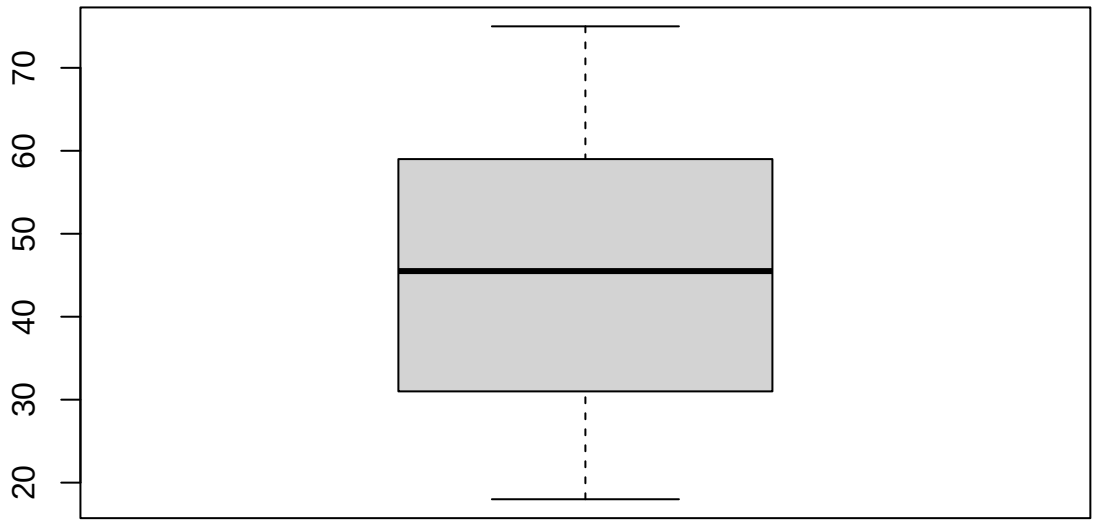
```
stem(idades)
```

```
##
##   The decimal point is 1 digit(s) to the right of the |
##
##   1 | 88888888888999999999999999999999
##   2 | 00000000000000000011111111111122222222222222222333333333333333333+19
##   2 | 55555555555555555555566666666666666666667777777777777777888888888888+13
##   3 | 00000000000000000111111111111222222222222222233333333333334444444
##   3 | 55555555555555555555556666666666666666666667777777777777777888888+12
##   4 | 000000000000000000000011111111111111111112222222222333333333444444+5
##   4 | 55555555555555555555566666666666666666666667777777777777777888888+20
##   5 | 0000000000000000000000011111111111111111222222222222222233333333+20
##   5 | 55555555555566666666666666777777777777777888888888888888899999999
##   6 | 00000000000000001111111111111111122222222222333333333333444444444
##   6 | 55555555555555566666666666666677777777777777888899999999999999999
##   7 | 000000000000000000000111111111111111222222222222222333333333333333+7
##   7 | 55555555555555555555
```

```
hist(idades)
```




```
boxplot(idades)
```




```
mean(idades)
```

```
## [1] 45.558
```

```
median(idades)
```

```
## [1] 45.5
```

```
tabela <- table(idades)
tabela[tabela == max(tabela)]
```

```
## 23
## 27
```

```
summary(idades)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   18.00   31.00   45.50   45.56   59.00   75.00
```

```
range(idades)
```

```
## [1] 18 75
```

```
quantile(idades)
```

```
##   0%  25%  50%  75% 100%
## 18.0 31.0 45.5 59.0 75.0
```

```
quantile(idades, probs = seq(0, 1, 0.10))
```

```
##   0%  10%  20%  30%  40%  50%  60%  70%  80%  90% 100%
```

```
## 18.0 23.0 28.0 34.0 40.0 45.5 50.0 56.0 62.0 70.0 75.0
```

```
IQR(idades)
```

```
## [1] 28
```

```
diff(range(idades))
```

```
## [1] 57
```

```
var(idades)
```

```
## [1] 277.4941
```

```
sd(idades)
```

```
## [1] 16.65816
```

```
classe <- seq(18, 75, 8)
frequencia <- table(cut(idades, breaks = classe, right = FALSE))
frequencia
```

```
##
## [18,26) [26,34) [34,42) [42,50) [50,58) [58,66) [66,74)
##     155     133     149     142     144     119     120
```

```
f_ca <- cumsum(frequencia)
f_rel <- round(prop.table(frequencia) * 100, 2)
f_rel_ca <- cumsum(f_rel)
```

```
tabela <- cbind(frequencia, f_ca, f_rel, f_rel_ca)
tabela
```

```
##         frequencia f_ca f_rel f_rel_ca
## [18,26)        155  155 16.11    16.11
## [26,34)        133  288 13.83    29.94
## [34,42)        149  437 15.49    45.43
## [42,50)        142  579 14.76    60.19
## [50,58)        144  723 14.97    75.16
## [58,66)        119  842 12.37    87.53
## [66,74)        120  962 12.47   100.00
```

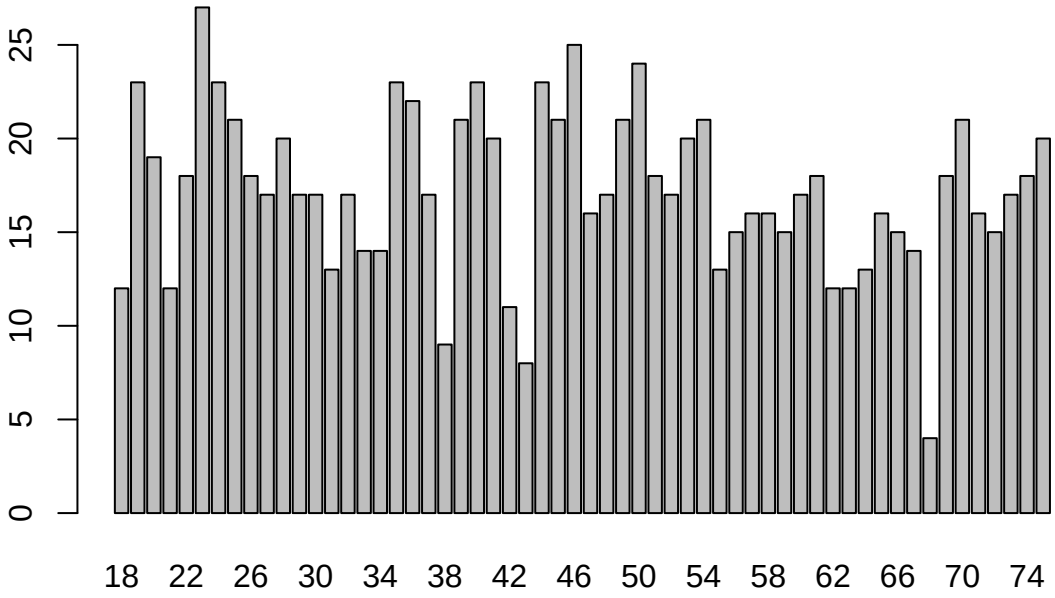
```
summary(idades)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   18.00   31.00   45.50   45.56   59.00   75.00
```

```
names(sort(-table(idades)))[1]
```

```
## [1] "23"
```

```
barplot(table(idades))
```


0
5
10
15
20
25
18
22
26
30
34
38
42
46
50
54
58
62
66
70
74