

2021-02-23-sprendimas

1

```
#a) Standartinis normalusis  
pnorm(0.6, mean=0, sd=1);
```

```
## [1] 0.7257469
```

```
dnorm(0.6, mean=0, sd=1);
```

```
## [1] 0.3332246
```

```
#b) Normalusis  
pnorm(0.6, mean=3, sd=2);
```

```
## [1] 0.1150697
```

```
dnorm(0.6, mean=3, sd=2);
```

```
## [1] 0.09709303
```

2

```
#a) Standartinis normalusis  
qnorm(0.95, mean = 0, sd = 1);
```

```
## [1] 1.644854
```

```
#b) Stjudento  
qt(.95, df = 20);
```

```
## [1] 1.724718
```

```
#c) Fišerio  
v1=5;  
v2=10;  
qf(c(.95), df1 = v1, df2 = v2, lower.tail = TRUE);
```

```
## [1] 3.325835
```

```
#d) Chi Kvadrato
qchisq(0.95, df=7, lower.tail = TRUE);
```

```
## [1] 14.06714
```

3

```
#a) Standartinis normalusis
qnorm(0.1, mean=0, sd=1, lower.tail=FALSE);
```

```
## [1] 1.281552
```

```
#b) Stjudento
qt(0.1, df=5, lower.tail=FALSE);
```

```
## [1] 1.475884
```

```
#c) Fišerio
qf(c(.1), df1 = 10, df2 = 20, lower.tail = TRUE);
```

```
## [1] 0.4543918
```

```
#d) Chi Kvadrato
qchisq(0.1, df=7, lower.tail=FALSE);
```

```
## [1] 12.01704
```

4

```
#a) Normalusis
dist_norm = rnorm(n=10000, m=10, sd=1);
median(dist_norm);
```

```
## [1] 10.00145
```

```
quantile(dist_norm);
```

```
##           0%           25%           50%           75%           100%
##  6.553152  9.320158 10.001447 10.675654 13.749489
```

```
quantile(dist_norm, c(.7, .8));
```

```
##           70%           80%
## 10.52136 10.84341
```

```
#b) Binominis
dist_bin = rbinom(7, 150, .05);
median(dist_bin);
```

```
## [1] 9
```

```
quantile(dist_bin);
```

```
## 0% 25% 50% 75% 100%
## 3.0 6.5 9.0 9.0 10.0
```

```
quantile(dist_bin, c(.7, .8));
```

```
## 70% 80%
## 9 9
```

5

```
#a)  $P(|X| \leq 1.5)$ 
pnorm(1.5, mean=1, sd=1.5) - pnorm(-1.5, mean=1, sd=1.5);
```

```
## [1] 0.5827683
```

```
#b)  $P(X > t) = 0.05$ 
qnorm(0.95, mean=1, sd=1.5);
```

```
## [1] 3.46728
```

13

```
1 - (pnorm(6.5, mean=2.1, sd=sqrt(3.1)) - pnorm(-1.1, mean=2.1, sd=sqrt(3.1)));
```

```
## [1] 0.04079864
```

14

```
qnorm(0.651, mean=3.4, sd=sqrt(2.8)) + 2.2
```

```
## [1] 6.249284
```