% maximum likelihood normális

mu <- 20 ; sigma.2 <- 4 ; set.seed(33)

X <- rnorm(100, mu, sqrt(sigma.2))

log.L <- function(mu.hat = 15, sigma.2.hat = 6){

n <- length(X)

n / 2 \* log(2 \* pi \* sigma.2.hat) +

1/2 \* sum((X - mu.hat)^2 / sigma.2.hat)

}

% load stats4 package

library(stats4)

(fit <- mle(log.L))

# maximum likelihood Cauchy

c<- 20 ; s<- 4 ; set.seed(33)

X <- rcauchy(100)\*s+c

log.L <- function(c.hat = median(X), s.hat = mad(X)\*qnorm(0.75)){

n <- length(X)

-n\*log(s.hat)+sum(log(sqr(s.hat)+sqr(X-c.hat)))

}

#load stats4 package

library(stats4)

(fit <- mle(log.L))