

# PBSR assgn2 Q2 and Q4

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```
knitr::opts_chunk$set(echo = TRUE)

## Q2
n=20
sim=rgamma(n,shape=1.5,scale=2.2)
data=sim
Negloglike=function(data,theta)
{
  l=0
  for(i in 1:n)
  {
    l=l+log(dgamma(data[i], theta[1],scale =theta[2]))
  }
  return(-l)
}

theta=c(0.1,0.1)
fit=optim(par=theta,Negloglike,data=sim)
fit
```

```
## $par
## [1] 1.920081 1.901232
##
## $value
## [1] 43.81597
##
## $counts
## function gradient
##      83      NA
##
## $convergence
## [1] 0
##
## $message
## NULL
```

```
##### 1
```

```
MyMLE=function()  
{  
  log(optim(par=theta,Negloglike,data=sim)$par[1])  
}
```

```
MyMLE()
```

```
## [1] 0.6523674
```