

# ex10

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```
# Apartat 1
m = rnorm(20, 175, 10)

# Apartat 2
mitjana = mean(m)
variancia = var(m)
desv_std = sqrt(variancia)

# Apartat 3
IC_95 = c(mitjana-qnorm(0.025, lower.tail=FALSE)*10/sqrt(20), mitjana+qnorm(0.025, lower.tail=FALSE)*10, lower.tail=FALSE)
print(IC_95)
```

```
## [1] 168.0528 176.8180
```

```
# Apartat 4
IC_99 = c(mitjana-qnorm(0.005, lower.tail=FALSE)*10/sqrt(20), mitjana+qnorm(0.005, lower.tail=FALSE)*10, lower.tail=FALSE)
print(IC_99)
```

```
## [1] 166.6757 178.1952
```

```
# Apartat 5
IC_95_sigma = c(mitjana-qt(0.025, 19, lower.tail = FALSE)*desv_std/sqrt(20), mitjana+qt(0.025, 19, lower.tail = FALSE)*desv_std/sqrt(20), lower.tail=FALSE)
print(IC_95_sigma)
```

```
## [1] 167.3596 177.5113
```

```
# Alternativament, R calcula automàticament l'interval amb
t.test(m)
```

```
##
## One Sample t-test
##
## data: m
## t = 71.104, df = 19, p-value < 2.2e-16
## alternative hypothesis: true mean is not equal to 0
## 95 percent confidence interval:
## 167.3596 177.5113
## sample estimates:
## mean of x
## 172.4354
```