

Chapter 8: Confidence Interval Estimation

Example 1

`qnorm(.975)`

Example 2

`qnorm(.995)`

Example 3

`qnorm(.95)`

Example 4

`1 - pt(1.314, 27)`

Example 5

`1 - pt(1.994, 70)`

Example 6

`pt(0, 22)`

Example 7

```
pt(2.431, 37)
```

Example 8

```
pt(2.145, 14) - pt(-1.345, 14)
```

Example 9

```
qt(.975, 19)
```

Example 10

```
qt(.995, 32)
```

Example 11

```
qt(.95, 17)
```

Example 12

```
qt(.975, 99)
```

```
mean(tv_hours$hours)
```

```
sd(tv_hours$hours) / sqrt(100)
```

```
t.test(tv_hours$hours, conf = 0.95)
```

Example 13

```
qt(.995, 97)
```

```
mean(LakeHuron)
```

```
sd(LakeHuron) / sqrt(98)
```

```
t.test(LakeHuron, conf = 0.99)
```

Example 14

```
qt(.95, 69)
```

```
mean(housing$rent)
```

```
sd(housing$rent) / sqrt(70)
```

```
t.test(housing$rent, conf = 0.90)
```

Example 18

```
names(exit)
```

```
n <- length(exit$obama)
```

```
k <- sum(exit$obama)
```

```
pbar <- k / n
```

```
SEP <- sqrt(pbar * (1 - pbar) / n)
```

```
MOE <- qnorm(0.975) * SEP
```

$\bar{p} + c(-\text{MOE}, \text{MOE})$

```
t.test(exit$obama, conf.level = 0.95)
```

End-of-Chapter 8 Exercises

Exercise 2

```
t.test(insurance$automobile, conf = 0.90)
```

```
t.test(insurance$automobile, conf = 0.95)
```

```
t.test(insurance$automobile, conf = 0.99)
```

Exercise 5

```
t.test(benefits$agree, conf.level = 0.90)
```

```
t.test(benefits$agree, conf.level = 0.95)
```

```
t.test(benefits$agree, conf.level = 0.99)
```

R Functions

- . `t.test(name,conf=.90)` Provides the interval estimate of a parameter at the 90% level of confidence using a data set called name.

- . `t.test(name,conf=.95)` Provides the interval estimate of a parameter at the 95% level of confidence using a data set called name.
- . `t.test(name,conf=.99)` Provides the interval estimate of a parameter at the 99% level of confidence using a data set called name.