

Chapter 10: Hypothesis Tests About μ and p : Applications

Example 1

```
qnorm(0.05)
```

```
pnorm(-2.43)
```

Example 2

```
qnorm(0.005)
```

```
qnorm(0.995)
```

Example 3

```
pnorm(2.93, lower.tail = FALSE) + pnorm(-2.93)
```

Example 5

```
qt(0.99, 39)
```

Example 6

```
1 - pt(1.25, 39)
```

Example 8

```
t.test(elderly$savings, conf.level = 0.99, mu = 65000, alternative =  
'g')
```

Example 9

```
qt(0.025, 24)
```

```
qt(0.975, 24)
```

Example 10

```
pt(1.156, 24, lower.tail = FALSE) + pt(-1.156, 24)
```

Example 11

```
t.test(wine$ml, conf.level = 0.95, mu = 750)
```

Example 12

```
qnorm(0.05)
```

Example 13

```
pnorm(-2.76)
```

Example 14

```
prop.test(1190, 1776, conf.level = 0.95, p = 0.70, alternative = 'l',  
correct = FALSE)
```

```
table(distract$cellphone)
```

Example 15

```
qnorm(0.005)
```

```
qnorm(0.995)
```

Example 16

```
pnorm(-2.13) + pnorm(2.13, lower.tail = FALSE)
```

Example 17

```
prop.test(557, 1161, conf.level = 0.99, p = 0.511, correct =  
FALSE)
```

Example 18

```
qnorm(0.05)
```

```
qnorm(.05, 550, 18 / sqrt(36))
```

```
pnorm(545.07, 540, 18 / sqrt(36), lower.tail = FALSE)
```

`pnorm(545.07, 542, 18/sqrt(36), lower.tail=FALSE)`

`pnorm(545.07, 544, 18/sqrt(36), lower.tail=FALSE)`

`pnorm(545.07, 545.07, 18/sqrt(36), lower.tail=FALSE)`

`pnorm(545.07, 546, 18/sqrt(36), lower.tail=FALSE)`

`pnorm(545.07, 548, 18/sqrt(36), lower.tail=FALSE)`

`pnorm(545.07, 549.99, 18/sqrt(36), lower.tail=FALSE)`

Example 19

`qnorm(0.95)`

`qnorm(0.80)`

Example 20

`qnorm(0.05)`

`qnorm(0.05, 550, 18/sqrt(56))`

End-of-Chapter 10 Exercises

Exercise 1

`qnorm(0.90)`

`pnorm(1.111, lower.tail = FALSE)`

Exercise 2

`qnorm(0.005)`

`qnorm(0.995)`

`2 * pnorm(1.47, lower.tail = FALSE)`

Exercise 3

`qnorm(0.05)`

`qnorm(0.95)`

`2 * pnorm(2.32, lower.tail = FALSE)`

`prop.test(321, 535, p = 0.55, conf.level = 0.90, correct = FALSE)`

Exercise 4

`qnorm(0.02)`

`pnorm(-2.1727)`

`prop.test(242, 346, p = 0.75, conf.level = 0.98, alternative = 'l',
correct = FALSE)`

Exercise 5

`qnorm(0.01, lower.tail = FALSE)`

`qnorm(0.10, lower.tail = FALSE)`

R Functions

- . `prop.test(r,n,conf.level=0.95,p=p0,alternative='l',correct=FALSE)`) Per- forms a lower-tail hypothesis test on the population proportion at the 0.05 level of significance.
- . `prop.test(r,n,conf.level=0.90,p=p0,alternative='g',correct=FALSE)`) Per- forms an upper-tail hypothesis test on the population proportion at the 0.10 level of significance.
- . `prop.test(r,n,conf.level=0.99,p=p0,correct=FALSE)` Performs a two-tail hypothesis test on the population proportion at the 0.01 level of significance.
- . `t.test(name,conf.level=.90,mu=μ0,alternative='l')` Performs a lower-tail test on the population mean at the 0.10 level of significance using a data set called name.
- . `t.test(name,conf.level=.99,mu=μ0,alternative='g')` Performs an upper-tail test on the population mean at the 0.01 level of significance using a data set called name.
- . `t.test(name,conf.level=.95,mu=μ0)` Performs a two-tail test on the population mean at the 0.05 level of significance using a data set called name.